Streamline your quality assurance measurements with RIT's comprehensive automated software solution. RIT *Complete* consolidates all of RIT's innovative therapy products into a single QA solution, combining Machine QA, MLC QA, Patient QA, and Imaging QA all in one package. RIT *Complete* utilizes a combination of powerful, robust routines in a user-friendly interface to maximize the efficiency and precision of your measurements.

MACHINE QA SOLUTIONS

- **Enhanced 3D Winston-Lutz (Isocenter Optimization)** Automatically process a set of 3 to 16 EPID Winston-Lutz images for a fast and accurate measurement of isocenter position, allowing you to optimize your SRS/SBRT delivery.
- Stereotactic Alignment (2D Winston-Lutz) Test
- Stereotactic Cone Profiles
- Field Alignment
- Gibbs Cone Analysis

TOMOTHERAPY® MEASUREMENTS

- Beam Planarity and Jaw Twist
- Overhead Laser Position Tool
- Import TomoTherapy® DICOM Film Files
- Import TomoTherapy® Calibration Files
- Static Gantry Angle Tool
- Helical Gantry Angle Tool
- Field Center vs. Jaw Setting Tool
- Couch Translation/Gantry Rotation
- Interrupted Treatment
- MLC Center of Rotation Tool
- IGRT Alignment
- Vidar TIFF Export

CYBERKNIFE® MEASUREMENTS

- End-to-End Test
- AQA Test
- Laser Coincidence Test
- Iris Test
- M6 MLC Test

BEAM MEASUREMENTS

- **Fully Automated Star Shot Analysis**
- Radiation/Light Field Coincidence
- Asymmetric Field/Matchline
- Electron Energy (TG-25)
- Quick Flatness and Symmetry
- Water Tank Beam Measurement Analysis
- Depth Dose, Cross, and Orthogonal Profiles
- Isodose Contours
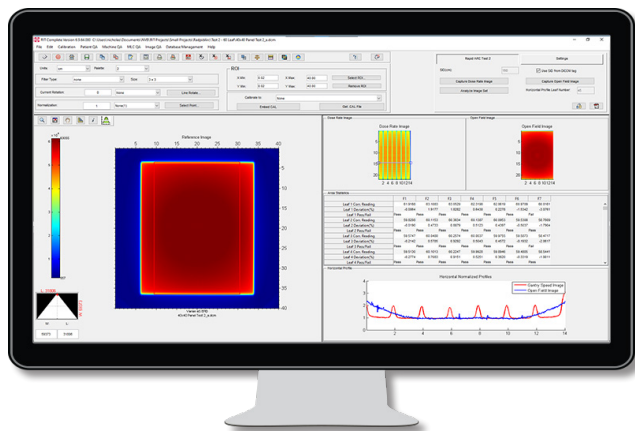- Image Histogram
- 3D Dose Profile
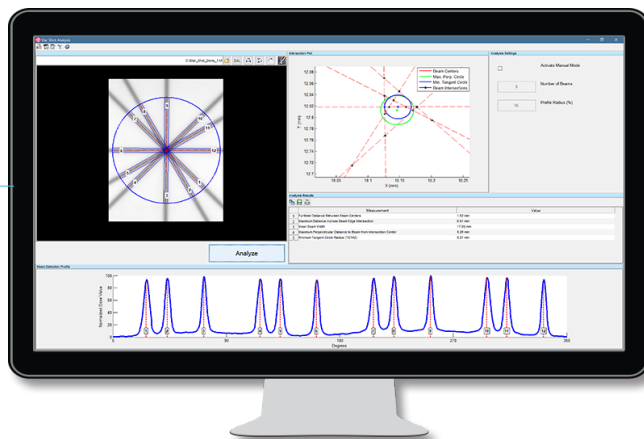
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RIT'S THERAPY QA PRODUCTS IN AN ALL-IN-ONE CONVENIENT AND COMPREHENSIVE PACKAGE

MLC QA SOLUTIONS

VARIAN LINAC

- **EPID Picket Fence Test:** This routine automates the classic picket fence test.
- **Automated Varian RapidArc® Tests:** Images may be taken at any distance from EPID, Film, or CR Images. RIT's RapidArc QA routines support the Millennium 120, HD120 MLC, and Halcyon MLC models. This includes: Tests 0.1, 0.2, 1.1, 1.2, 2 and 3.
- **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.
- **Varian Halcyon® MLC Analysis:** Perform a picket fence or comprehensive RapidArc analysis of the Halcyon MLC.
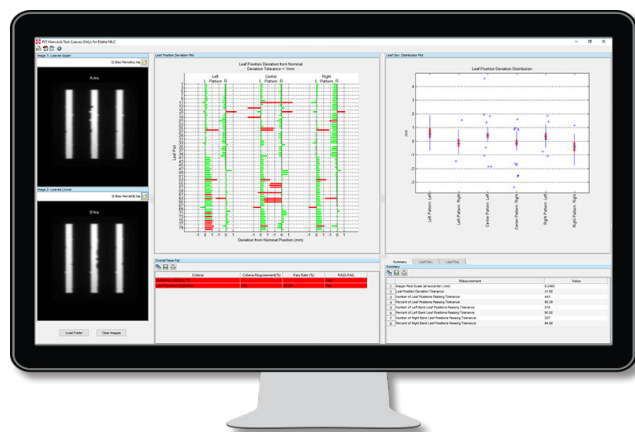
ELEKTA LINAC

- **EPID Picket Fence Test:** This routine automates the classic picket fence test.
- **Hancock Tests for Elekta Machines:** The Hancock Tests (2-Image Test, 4-Image Test, and With Backup Jaw Test) use the Elekta iView™ imager to automatically measure leaf position vs. isocenter position, and jaw leaf setback measurements.
- **Elekta Leaf Speed Test:** This test aligns two images to analyze the consistency of the leaf speed for both Elekta iView™ and Agility™.
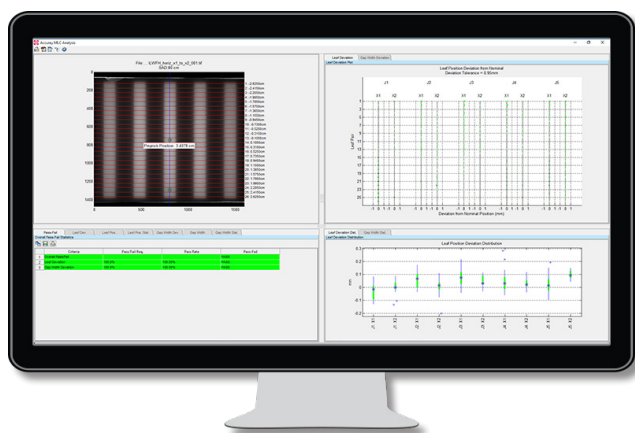
CYBERKNIFE® M6 MLC

- **CyberKnife® M6 MLC QA:** Perform a fully automated "Garden Fence" MLC test for the M6 multi-leaf collimator. The software will (1) automatically crop the image; (2) automatically align the image; (3) perform automatic orientation of any images that are rotated or flipped; (4) automatically detect any leaves, eliminating the need for template files; and (5) perform the analysis.

OTHER MLC TESTS

- **Bayouth MLC Analysis:** Analyze MLCs that require leaf gaps between banks.
- **Additional MLC Tests:** These include the TG-50 Picket Fence Test, MSK Leaf Test, Varian DMLC Test Patterns, and MLC Transmission analysis.

RIT *Complete*

PATIENT QA SOLUTIONS

TOMOTHERAPY® REGISTRATION

Easily perform exact dose comparisons for TomoTherapy patient QA. This innovative wizard uses a TomoTherapy plan, a dose map, and a film to determine position and dose accuracy, using the red or green lasers. This automated technique extends standard registration methods, as the isocenter location is not required to be in the center of the exposed dose region. Coronal or Sagittal slices may be analyzed, and the routine allows a structure to display as an overlay ROI. Utilize RIT's patented Plan-Based Calibration technology with this routine.
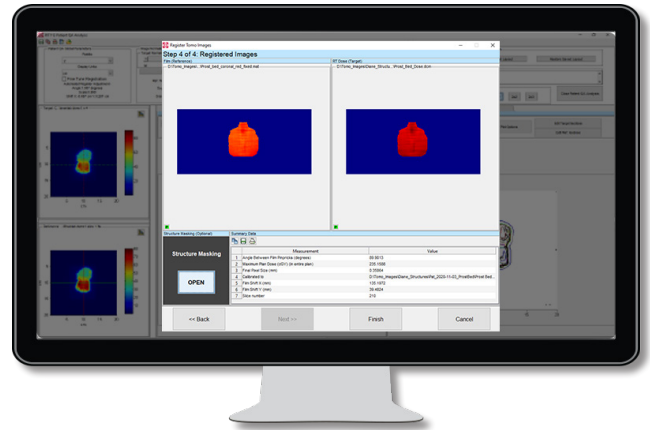
IMRT, IGRT & RAPIDARC®/VMAT ANALYSIS

- **Patient QA Measurements**
  RIT *Complete* includes the following Patient QA (IMRT) measurements: Gamma Analysis, Distance-to-Agreement (DTA), Profiles, Van Dyk's Analysis, Subtraction, Composite Analysis, Isodose Curves, Addition, Centroid Measurement, IGRT Alignment, IMRT Fine-Tune Registration, Bilinear Interpolation & Non-Cropping Rotation, Proportion Passing Plot, and others.

- **Plan-Based Calibration**
  Make quick, relative comparisons between any dose map and your EPID, film, and CR images.
  Patents: EP 1683546, CA 2567197, JP 4366362, JP 4838161, US 7024026, US 7233688, US 7639851, and US 7680310.
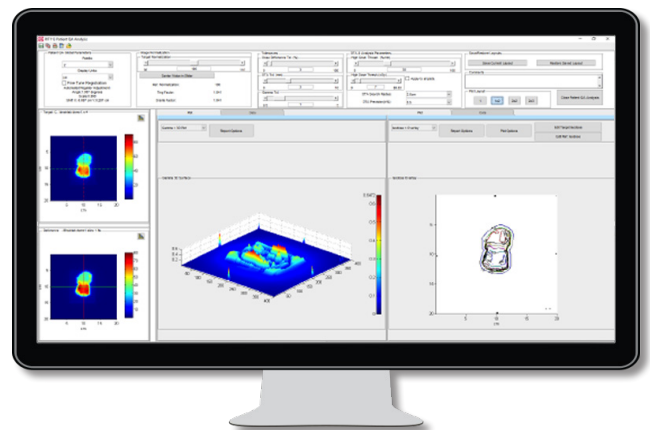
OTHER PATIENT QA MEASUREMENTS

- **Dose Calibrations**
  This includes perpendicular dose calibration, parallel dose calibration, MLC calibration technique*, iView™ calibration, Kodak CR (perpendicular and spatial calibrations), optical density (OD) calibration, PDD table editor, calibration file merge, and daily output factor adjustment for calibration curves.
  *Patents: EP 1318857, CA 2418232, JP 3817176, US 6675116, US 6934653, and US 7013228

- **Scanner Spatial Calibration**
  The spatial calibration is not a dose conversion, but rather a means to determine the exact pixel size for the Vidar film scanner or flatbed scanner. This gives you the most accurate distance measurements.

- **Automated Image Fill for Anthropomorphic Phantom QA**
  Use this function to automatically correct and fill any holes or cutouts in the image file. Perform patient QA with an anthropomorphic phantom for both calibrated and uncalibrated images.

- **Patient QA Image Registration**
  Simultaneously perform fully-automated registration control point positioning in both traditional and RunQueueA (automated batch analysis) IMRT. Template-based registration may also be performed.

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RIT'S THERAPY QA PRODUCTS IN AN ALL-IN-ONE CONVENIENT AND COMPREHENSIVE PACKAGE

RIT *Complete*

IMAGING QA SOLUTIONS

CATPHAN®, KV AND CONE BEAM

- Varian 504 Catphan
- Varian 604 Catphan
- Elekta 503 Catphan
- Siemens Image Quality Phantom

ELECTRON DENSITY

- Cheese Phantom
- CIRS 062, 062A, 062M (Cone Beam)
- Gammex 467

EPID QC

- RIT EPID (EPID QA Phantom)
  Manufactured and sold by Standard Imaging.
- PTW EPID
- Las Vegas EPID
- Standard Imaging QC-3

KV/MV

- Standard Imaging ISOCube
- Penta-Guide

DR/CR KV

- IBA Primus® L
- PTW NORMI® 4
  (20 x 20 cm and 30 x 30 cm)
- Leeds TOR-18 FG
- Standard Imaging QC-kV1

CUSTOM TOLERANCE MANAGEMENT

Use the Tolerance Manager to set tolerance values and pass/fail criteria for every measurement used in all automated phantom analyses. This tool provides the flexibility necessary to customize tolerances on a wide array of LINACs and imaging systems.

BUILT-IN AUTOMATION FEATURES

RIT*trend*™

RIT*trend*™ is the all-in-one statistical database tracking solution that stores data for all your department's measurements. Set your own specifications and RIT*trend* automatically analyzes process control limits on equipment analyzed with RIT *Complete,* turning database recording into a major tool for analysis and record-keeping.

Cerberus

Cerberus is the hands-free batch phantom analysis tool, constantly operating in the background of you workstation. It automatically monitors folders and pin-points specific files to process and analyze. It can match many set criteria, such as file naming patterns, DICOM tag matches, or file types.

RunQueueA

RunQueueA is the automated patient QA batch analysis feature that automates your patient QA by setting up scripts for your repetitive patient QA/IMRT workflows. Perform automated matching and sorting of reference and target images simultaneously. Easily export your results to a customizable PDF report.

RunQueueC

RunQueueC is the fully automated batch phantom analysis tool. With one click, easily perform analysis on any number of images. RunQueueC will automatically generate analysis reports in a designated folder and export data to the RIT*trend* database for statistical tracking and trending over time.