



**IMRT QA Solutions** Faster, easier, electronic IMRT QA

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## IMRT QA. Do it faster.

Reduce the time spent on both machine QA and patient plan verification with Varian's IMRT QA Solutions. This set of tools streamlines the IMRT QA process and helps you establish and document your own best practices.

## Make it easier.



Varian's expertise in IMRT now includes IMRT QA Solutions. Through customizable process automation and reduced dependence on film, these tools make IMRT QA faster and easier.

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### **Do it your way.**

Establish a QA program tailored to your requirements. You choose the tests, the tolerances, and the frequency.

### **Automate your processes.**

Automation with IMRT QA Solutions can cut your testing and verification time by as much as 80%. Create automated testing protocols that guide you through the day's tasks. Reduce manual data entry and eliminate manual calculation with automated data recording.

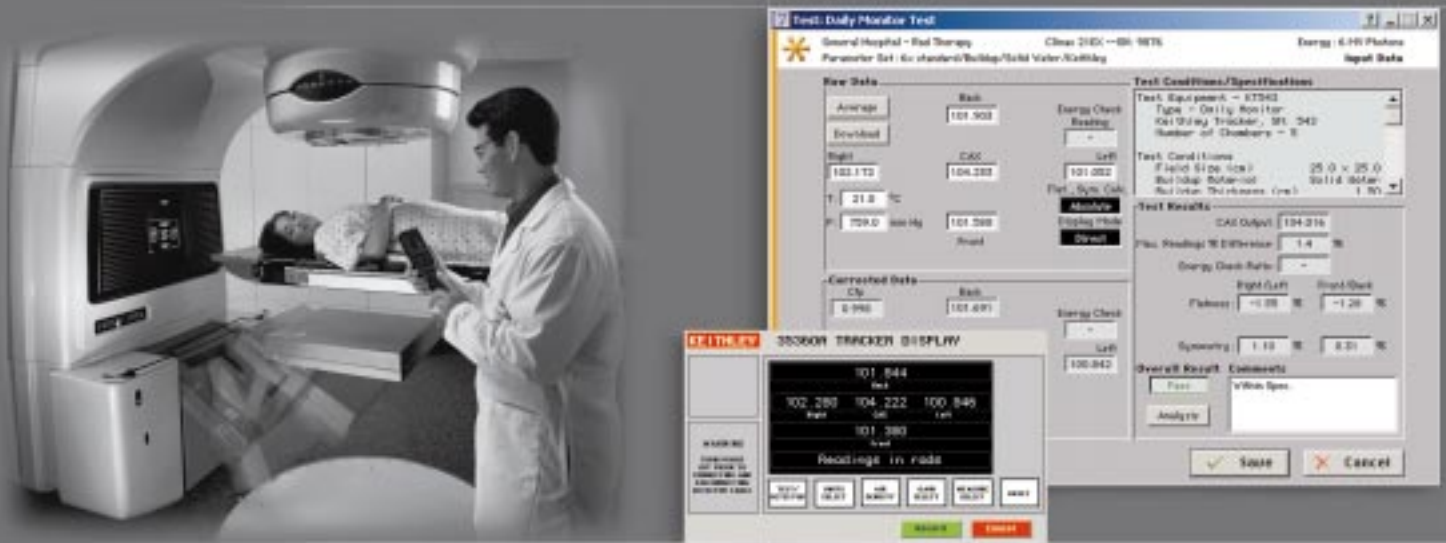
### **Easily organize, analyze, and present your results.**

Get a full, automated record of all QA data, organized the way you need it. Use trend analysis to identify potential problems before they cause downtime. Meet reporting requirements more easily with a wide variety of reports.

### **Speed up and improve your pre-treatment QA.**

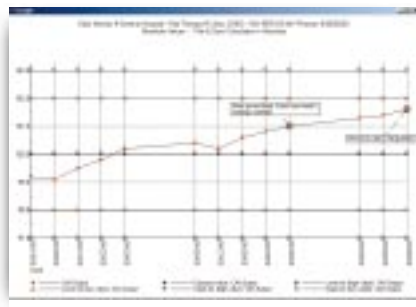
Satisfy regulatory requirements and validate the quality of your IMRT treatment plans with faster data. Perform relative dosimetry tests without film in significantly less time, and capture a denser array of data points compared with specialized measurement devices.

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Argus LINAC has over 40 tests. One of them, the Daily Monitor Test, makes morning warm-up more efficient with easy data acquisition and immediate feedback.

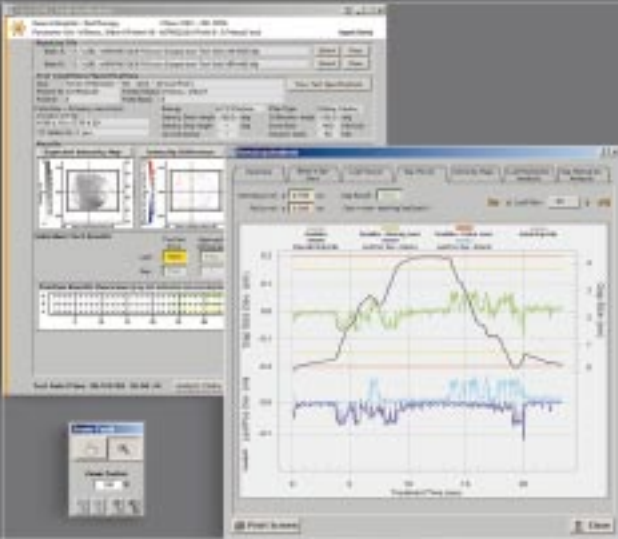
IMRT QA Solutions is a set of three products: Argus LINAC, Argus IMRT, and Portal Dosimetry. Together, they help you answer the three important questions in IMRT QA.



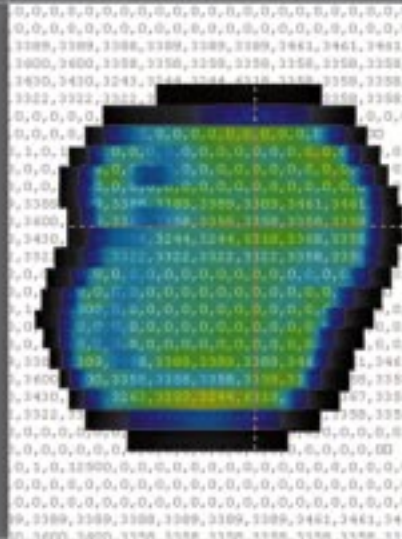
Identify trends in flatness and symmetry with Argus LINAC. Trend graphs can also be created for other quantities, such as central axis output and energy data.

## Is the linear accelerator operating to specification?

Ensure consistent, smooth execution of linear accelerator tests with Argus LINAC. This module contains the full set of linear accelerator tests used in current standards of practice. Customizable test templates, reminders, alerts, and a rules engine put you in control of data management. Status reports, electronic interfaces to test equipment, and auto-calculation of test results speed up data collection. An Operator mode guides therapists quickly through daily testing routines, while a Physics mode provides the physicist with complete oversight and analysis capabilities.



DynaLog™ Analysis provides a wide range of tools for in-depth analysis of collimator operation.



All Varian MLCs generate DynaLog files during the course of each dynamic or segmental treatment. DynaLog files record the actual and expected position of each leaf in the MLC, as well as the cumulative dose fraction delivered every 50 milliseconds.<sup>1</sup>

View historical results and create trend graphs both during and after testing. Argus LINAC analyzes data according to your parameters and displays it according to your needs.

Argus LINAC's extensive reporting capabilities help you comply more efficiently with AAPM Task Group, NCRP, JCAHO, ACR, and IAEA recommendations and regulations. Data organized electronically with Argus LINAC is easily harnessed for fast report generation. You specify the date range and the data subset for each report, then choose from a virtually unlimited variety of formats.

### Is the MLC operating to specification?

Maintain optimum MLC performance with Argus IMRT's broad range of MLC tests and sophisticated DMLC analysis tools. The MLC tests help you validate collimator operation, document safety checks, and organize data into a comprehensive record. As with Argus LINAC, Argus IMRT lets you easily find and format data for your reporting needs.

Argus IMRT also introduces a new technology, DynaLog™ Analysis. This tool analyzes the DynaLog files created for any dynamic or segmental field or plan. Use DynaLog Analysis to:

- compare the actual and expected leaf motions using tolerances you define
- perform statistical analysis using histograms, RMS calculations, and trending to help detect weakening motors before they fail
- see leaf motion simulations and in-depth graphical analysis of any individual leaf or gap.

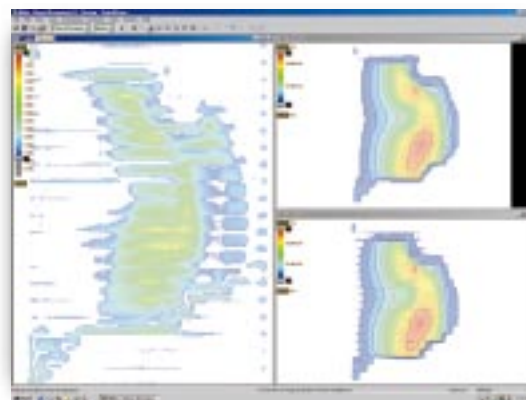
<sup>1</sup> This description of the DynaLog file pertains to sliding window and step-and-shoot fields. For conformal arc fields, the DynaLog file records the actual and expected position of each leaf along with the gantry angle.

## Can I verify my treatment plans?

With Varian's Portal Dosimetry, quickly verify that the dose you plan is the dose you deliver. These automated, electronic tools help you compare, analyze, and document results without having to expose, process, and calibrate film.

Use Portal Dosimetry to compare an electronic relative dose image from Varian's PortalVision™ portal imager to a predicted portal dose image calculated by Varian's Eclipse™ treatment planning system. Then get instant, quantitative comparisons of the two images, including dose difference, gamma analysis,<sup>2</sup> point dose measurements, and line profiles.

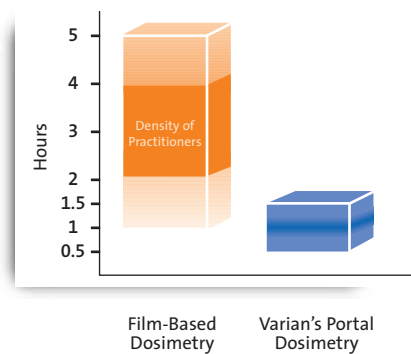
Another advantage of Portal Dosimetry for pre-treatment IMRT QA is a higher density of data points. Direct-to-digital data capture provides significantly more dose measurement points than is possible with special-purpose measurement devices. Higher density data makes it easier to evaluate IMRT fields with high dose gradients.



The predicted image (upper right) appears quite similar to the acquired image (lower right). The gamma analysis (left) reveals some mismatch (yellow and yellow-green areas signify a gamma index >1), prompting closer scrutiny of the field.

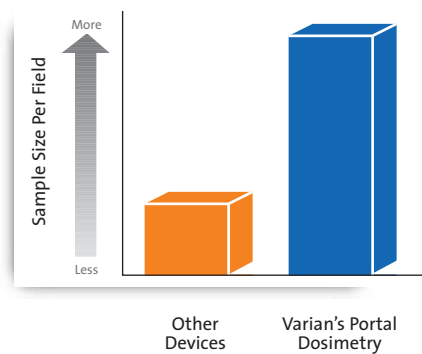
<sup>2</sup> Gamma analysis is a method for comparing two-dimensional dose distributions, incorporating both distance-to-agreement and dose difference criteria. (See Low DA, et al.; A technique for the quantitative evaluation of dose distributions; Med Phys 1998 May; 25(5):656-61.)

### Process Time of Varian's Portal Dosimetry vs. Film-Based Dosimetry



Film-based dosimetry takes 2 to 4 hours for a majority of users. Varian's Portal Dosimetry takes about 0.5 to 1.5 hours—a significant savings in time.

### Data Density Acquisition of Varian's Portal Dosimetry vs. Other Devices



Increase your confidence in your  
IMRT program. Call today for  
a demonstration of Varian's  
IMRT QA Solutions.





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