POWERFUL TG-142 QA
FOR ROUTINE TG-142 QUALITY ASSURANCE
DOSELAB SOFTWARE IS...

Fast
Complete your routine QA tests in minutes with DoseLab’s fully-automated software. DoseLab quickly analyzes image-based measurements acquired with EPID, film and/or measurement arrays.

Simple
DoseLab is built for efficiency with a user-friendly interface. Example files, a quick-start guide and demo videos are provided to easily learn DoseLab. In addition, DoseLab’s excellent support team provides online training and answers to all of your questions.

Powerful
DoseLab is the premier software package for compliance with TG-142. The DoseLab Pro package also includes tools for film dosimetry and IMRT/VMAT QA. All routines employ advanced algorithms for sub-pixel calculations to give you the most accurate and objective results.

What is TG-142?
In 2009, AAPM Task Group 142 published a report updating guidance for the Quality Assurance of Medical Accelerators. The report built upon TG-40 (1994), adding tests for modern linac components such as multi-leaf collimators and integrated imaging devices.

Whether for compliance with state law, preparation for ACR accreditation, RPC review, or simply for good practice, radiation oncology clinics have a goal to be TG-142 compliant. DoseLab software provides the tools needed to meet this goal.
DOSELAB TG-142 FEATURE COMPARISON

<table>
<thead>
<tr>
<th>TG-142 Mechanical Performance</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flatness &amp; Symmetry</td>
<td>✓</td>
</tr>
<tr>
<td>Light vs. Radiation Field</td>
<td>✓</td>
</tr>
<tr>
<td>Profile constancy compare to baseline</td>
<td>✓</td>
</tr>
<tr>
<td>Penumbra Calculation</td>
<td>×</td>
</tr>
<tr>
<td>Starshots</td>
<td>✓</td>
</tr>
<tr>
<td>Winston Lutz Analysis (with 3D analysis)</td>
<td>✓</td>
</tr>
<tr>
<td>Winston Lutz 3D results with as few as two images</td>
<td>✓</td>
</tr>
<tr>
<td>Recommended VMAT/DMLC QA</td>
<td>×</td>
</tr>
<tr>
<td>MLC Strip Test</td>
<td>✓</td>
</tr>
<tr>
<td>Leaf Positioning Accuracy</td>
<td>✓</td>
</tr>
<tr>
<td>Interleaf Transmission Trending</td>
<td>✓</td>
</tr>
<tr>
<td>MLC Log File Analysis</td>
<td>✓</td>
</tr>
<tr>
<td>Sub-Pixel Accuracy</td>
<td>✓</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TG-142 Imaging QA</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>MV/kV Planar Imaging</td>
<td>✓</td>
</tr>
<tr>
<td>CBCT Analysis</td>
<td>✓</td>
</tr>
<tr>
<td>Scaling, Spatial resolution, Contrast, Uniformity and CNR (with 1 phantom image)</td>
<td>✓</td>
</tr>
<tr>
<td>CBCT Automatic Slice Detection</td>
<td>✓</td>
</tr>
<tr>
<td>Vendor-neutral phantom support</td>
<td>×</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TG-142 Monthly Efficiency</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Results Database &amp; Trending Images Required</td>
<td>≥ 26</td>
</tr>
<tr>
<td>Phantoms Required</td>
<td>8</td>
</tr>
<tr>
<td>Vault Trips Required</td>
<td>14</td>
</tr>
<tr>
<td>AutoQA</td>
<td>✓</td>
</tr>
</tbody>
</table>

*Requires DoseLab Phantom Set (see pg. 7)

“The RPC monitors nearly two thousand clinics worldwide and uses DoseLab’s TG-142 image analysis tools to help analyze quality assurance tests accurately, reproducibly, and efficiently.”

Stephen Kry, Ph.D., D.A.B.R.
Radiological Physics Center
TG-142 MACHINE QA TOOLS

**MV/kV Planar Imaging**

Compatible with common imaging phantoms, this automated DoseLab module satisfies all recommendations in TG-142 for planar imaging QA including: resolution, contrast, noise, uniformity and image scaling.

**Winston-Lutz**

Whether for stereotactic radiosurgery (SRS) or IGRT positioning / re-positioning QA, DoseLab makes your Winston-Lutz test simple and quantitative, automatically performing both 2D and 3D analysis.

**Cone Beam CT**

Providing a comprehensive analysis of your Cone Beam or CT simulator, DoseLab automatically finds the correct image slices for QA using CatPhan or other CT phantom image sets.

**AutoQA**

Complete all of your DoseLab TG-142 QA with just two mouse clicks.

DoseLab includes an “AutoQA” module that allows tests to run automatically, in sequence. AutoQA handles the processes of opening images, selecting a DoseLab module, setting parameters for analysis and computing results.

AutoQA significantly reduces the time you spend on your monthly TG-142 routine. After you approve the analysis, all results are saved in both DoseLab's machine QA database and a PDF report for your monthly records.
Starshots
Recommended by TG-142 for testing the mechanical stability of collimator, gantry and couch rotation, DoseLab performs a quantitative starshot analysis with only two mouse clicks.

Flatness and Symmetry
With one EPID or film image, you can easily verify constancy of your profiles: flatness, symmetry, field size, penumbra, max difference from a baseline, as well as light/radiation field coincidence.

VMAT and Dynamic MLC QA
Using different dose rates, gantry speeds and MLC leaf speeds to verify accurate dose delivery, DoseLab automatically performs an analysis of manufacturer's recommended tests.

MLC Strip Tests
Often referred to as picket fence tests, this tool analyzes radiation strip patterns to determine leaf position accuracy as well as MLC transmission characteristics.

MLC Log File Analysis
Automatically verify that MLC are performing to TG-142 specifications for leaf speed and max RMS errors.
REPORTS & TREND ANALYSIS

Custom Tolerances
Customizable tolerance sets allow every DoseLab analysis to be reported as a pass, warn or fail. Unlimited sets can be defined for use with different machines, energies, etc., giving full flexibility for acceptance criteria.

Results Database
Identify trends with DoseLab’s database viewer, which graphs your data as a function of time. Baseline and tolerance levels are also plotted on the graphs for quick visual verification of operating parameters. Easily compare data by overlaying two or more machine’s data at the same time on a single graph.

PDF Reports
Create detailed PDF reports which include your test parameters, quantitative results, and annotated images. PDF reports are a perfect format for inclusion in annual reports.

Database Editor and Task Scheduler
DoseLab features a test definitions editor that allows users to create their own sets of tests within the database. Tests can be based on a numerical entry, a text entry, a boolean choice, or even a formula that automatically calculates results based on two or more inputs. Tests can also easily be grouped such as the collection of data during morning linac warmup or for performing daily HDR QA.

Easily schedule tasks and receive e-mail reminders when they are due.
SPECIFICATIONS

Computer Requirements
• Operating System: Windows XP, Vista, 7, or 8
• Display: 32 bit video card, 1024 x768 minimum resolution
• RAM: 2 GB
• Hard drive space: 1 GB
• Prerequisites: Microsoft Excel, Administrative Rights
• Report formats: XLS and PDF

The DoseLab Phantoms
*The fastest TG-142 phantoms on the planet*

MC² - The **first** phantom that can be used for both MV and kV planar imaging tests
WL³ - For Winston-Lutz analysis and for checking IGRT coincidence accuracy
RLf - For flatness & symmetry checks and radiation field/lightfield coincidence

CONSIDER A ‘PRO’ UPGRADE

Measured Film Calibration and Analysis
DoseLab Pro is the most efficient software available to convert your films into quantitative images of absolute dose. DoseLab Pro guides you through every step - from scanner and color-channel corrections, to an ultra-fast method for calibration, to batch conversion of your new scans to dose images.

IMRT & VMAT QA
Validate calculated dose with the “Dose Comparisons” module using measurements from film or most diode/ion chamber arrays. In batch mode, DoseLab Pro also automatically performs QA for multiple fields in sequence.

Licensing
• DoseLab TG-142 license provides all TG-142 analysis tools, reports and trend analysis.
• Log file analysis for machine QA included with TG-142 license. Analyze thousands of files at once with an available upgrade.
• Installation: Local drive or network drive. Unlimited installs.
• DoseLab Pro upgrade adds film dosimetry and dose comparisons
Mobius Medical Systems, LP provides the radiation oncology community with innovative software to streamline quality assurance processes and increase positive patient outcomes.