

Delta⁴

by ScandiDos

Delta4 Machine QA 3D
**Ensure Precision.
Enhance Patient Safety.**



Machine QA 3D

CONFIDENCE | SAFETY | ACCURACY | EFFICIENCY

Confidence in Your Machine

In radiation therapy, precision is everything. Even the slightest deviation in machine performance can impact treatment outcomes.

Delta4 Machine QA 3D is an optional software module that makes full use of the 3D measurement capabilities of the Delta4 Phantom+ for comprehensive machine QA. It combines automated machine-specific tests with 3D verification of highly modulated treatment plans.

With periodic checks and immediate results, Machine QA 3D helps you monitor linac performance over time, identify changes and trends, and maintain confidence in your machine.

EFFICIENT TESTING WITH A SINGLE DICOM PLAN

Performing quality assurance has never been easier. Delta4 Machine QA 3D streamlines the testing process by consolidating all necessary measurements into a single DICOM plan. Instead of conducting multiple separate measurements, users only need to acquire data from this one plan to obtain results for all selected tests in their protocol. This not only saves time but also ensures a smooth and efficient workflow, allowing clinics to maintain high-quality standards without disrupting treatment schedules.

CUSTOMIZED QA PROTOCOLS FOR COMPLETE CONTROL

Every clinic has unique quality assurance needs. Delta4 Machine QA 3D allows you to define your own Machine QA protocols by selecting from a comprehensive list of tests, tailoring each test to your requirements, and determining how frequently each protocol should be performed.

Open DICOM RT Plan Template...

☐ Remove private tags

Protocol Name: Monthly MQA

Phantom: Phantoms+732

Treatment Device: LINACV

DICOM Patient ID: 1802122

DICOM Patient First Name: MCMonaco

DICOM Patient Last Name: Ani6MV

Categories

Setups

3D

MLC Check

MLC Leakage

Start-up Behavior

Output

Depth Dose Profiles

Lateral Dose Profiles

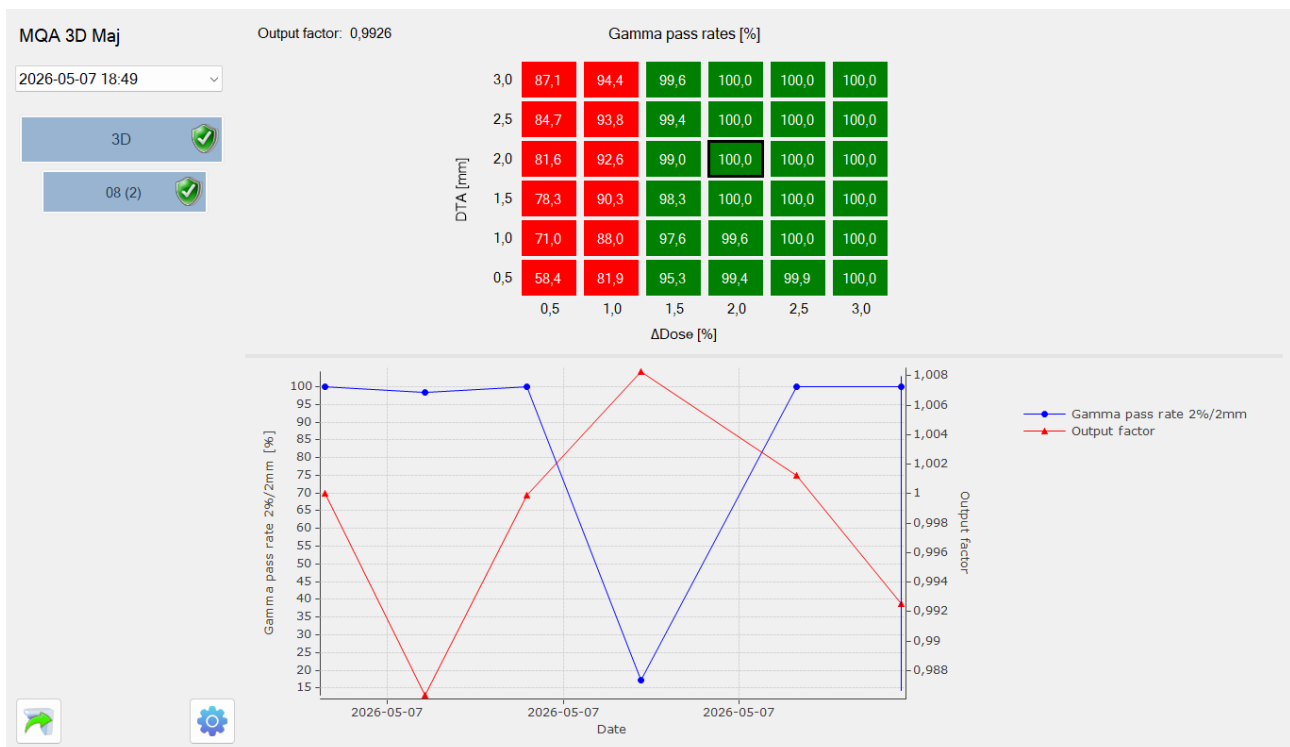
Energy	Gantry angle [°]	Collimator angle [°]	
Photon 6 MV	0	0	
Photon 4 MV	90	270	
Photon 4 MV	180	0	
Photon 10 MV	0	0	
Photon 6 MV, FFF	270	0	

Define your own Machine QA protocols

COMPREHENSIVE QA TESTING FOR RELIABLE PERFORMANCE

Delta4 Machine QA 3D offers a wide range of tests designed to evaluate the accuracy and stability of every aspect of your linac. Each test is designed to provide critical insights, helping you maintain optimal treatment quality.

- **Machine QA 3D** - Go beyond individual machine parameters by using a highly modulated treatment plan to evaluate the overall performance of your linac. Select a plan that challenges your linac's capabilities and measure it regularly with the Delta4 Phantom+. Each measurement can be compared against the reference using Gamma Evaluation, providing an intuitive visualization of changes in dose delivery and helping you monitor machine performance over time.
- **Output Check** - Monitors linearity, output constancy, and output versus dose rate.
- **MLC Leakage** - Measures interleaf leakage across the MLC bank and monitors changes over time.
- **Machine Start-Up Behavior** - Monitors machine performance during the first seconds of radiation delivery and measures stabilization time. Essential for gated treatments when the delivery is frequently interrupted.
- **Lateral Dose Profiles** - Compares lateral dose distributions against a reference to detect deviations. Supports testing consistent with AAPM TG-142 recommendations.
- **Depth Dose Profiles** - Compares depth dose distributions against a reference to detect deviations. Supports testing consistent with AAPM TG-142 recommendations.
- **MLC Check** - Verifies the absolute positioning of MLC leaves to support precise beam shaping and treatment accuracy.



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Innovative and Efficient QA delta4family.com

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