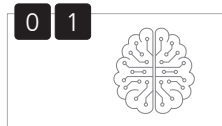# 10 Reasons why you should use VERIQA RT EPID 3D for Treatment Plan and Delivery Verification

01 EPID dosimetry with Monte Carlo calculations

Some EPID algorithms have difficulties in predicting the correct dose in inhomogeneous patient anatomies. VERIQA RT EPID 3D enhances the advanced back-projection algorithm developed by the Netherlands Cancer Institute – Antoni van Leeuwenhoek Hospital (NKI-AVL) with a unique, patent-pending Monte Carlo-based inhomogeneity correction. This combination allows for a highly accurate patient dose reconstruction for all treatment sites, including those with significant tissue heterogeneities.
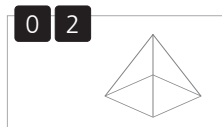
02 True 3D patient dosimetry

Unlike other commercial EPID dosimetry solutions, VERIQA RT EPID 3D enables true 3D patient dosimetry by using only the acquired EPID image and the patient anatomy from the patient CT scan for 3D dose reconstruction. As a combined solution, VERIQA RT EPID 3D compares EPID reconstructed dose directly with planned patient dose and enables 3D gamma comparisons as well as the calculation of patient dose-volume histograms (DVHs) for both pre-treatment and in vivo dosimetry.
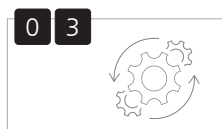
03 A single solution for pre-treatment and in vivo dosimetry

VERIQA RT EPID 3D uses the same algorithm for pre-treatment and in vivo EPID dosimetry, making it easy for you to directly compare in vivo with pre-treatment patient dose distributions. By combining pre-treatment and in vivo EPID dosimetry into a single solution, VERIQA RT EPID 3D allows you to identify and estimate the extent of patient-related errors for each delivered fraction.

04 Phantomless pre-treatment QA

VERIQA RT EPID 3D reconstructs a 3D patient dose distribution from EPID images acquired "in air". This eliminates the need for phantom setup or re-planning, making pre-treatment QA much faster and more efficient without compromising accuracy.

05 Fast detection of clinically relevant errors

Studies have shown that most errors occur during the first and subsequent treatment fractions and remain unnoticed during pre-treatment verification. In vivo EPID dosimetry is a highly effective tool for detecting clinically relevant errors originating from different error sources (e.g., changes in the patient position or anatomy). Ensure safer treatments by taking corrective action at an early stage in the treatment course.

06 Automated workflows and instant web-based access to results

VERIQA RT EPID 3D provides a fully automated workflow from image acquisition and calculation to evaluation and documentation. All steps are automatically initiated upon receipt of a treatment plan based on a user-defined, plan-specific task, requiring no input from you. QA results can be quickly accessed via web browser from any device and from anywhere in your network.

07 Fast, easy commissioning

VERIQA RT EPID 3D reduces commissioning time to a minimum. Unlike other solutions, the VERIQA RT EPID 3D software uses a generic EPID model template, requiring only a few measurements to create an accurate and machine-specific EPID model.

08 Clinically proven with more than 75,000 patient treatments

The back-projection algorithm of VERIQA RT EPID 3D is a clinically proven and well-established method, which has been successfully used at the Netherlands Cancer Institute – Antoni van Leeuwenhoek Hospital (NKI-AVL) in more than 75,000 patient treatments since 2005. VERIQA RT EPID 3D users benefit from a transparent and independent solution which has been extensively validated in numerous peer-reviewed publications.

09 Integrated with VERIQA patient QA platform

VERIQA RT EPID 3D seamlessly integrates into the modular VERIQA patient QA platform, giving you the flexibility to select and combine different measurement- and calculation-based verification methods to achieve the best result. Use VERIQA RT EPID 3D as a complete solution for patient treatment plan and delivery verification. Combine the new EPID in vivo dosimetry module with other VERIQA plan QA tools, e.g., Monte Carlo-based 3D dose calculations, to increase error detection capabilities and add an extra safety net for radiotherapy treatments.

10 Supports major linacs

As a vendor-independent 3D dose calculation software, VERIQA RT EPID 3D supports major linacs equipped with modern EPID imaging panels. The new EPID software can be efficiently used with all treatment planning systems capable of DICOM-RT export, and with all major treatment modes, such as 3D, IMRT, Arcs & VMAT, SBRT and SRS.

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EPID & Monte Carlo
Powerful alone, stronger together.

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