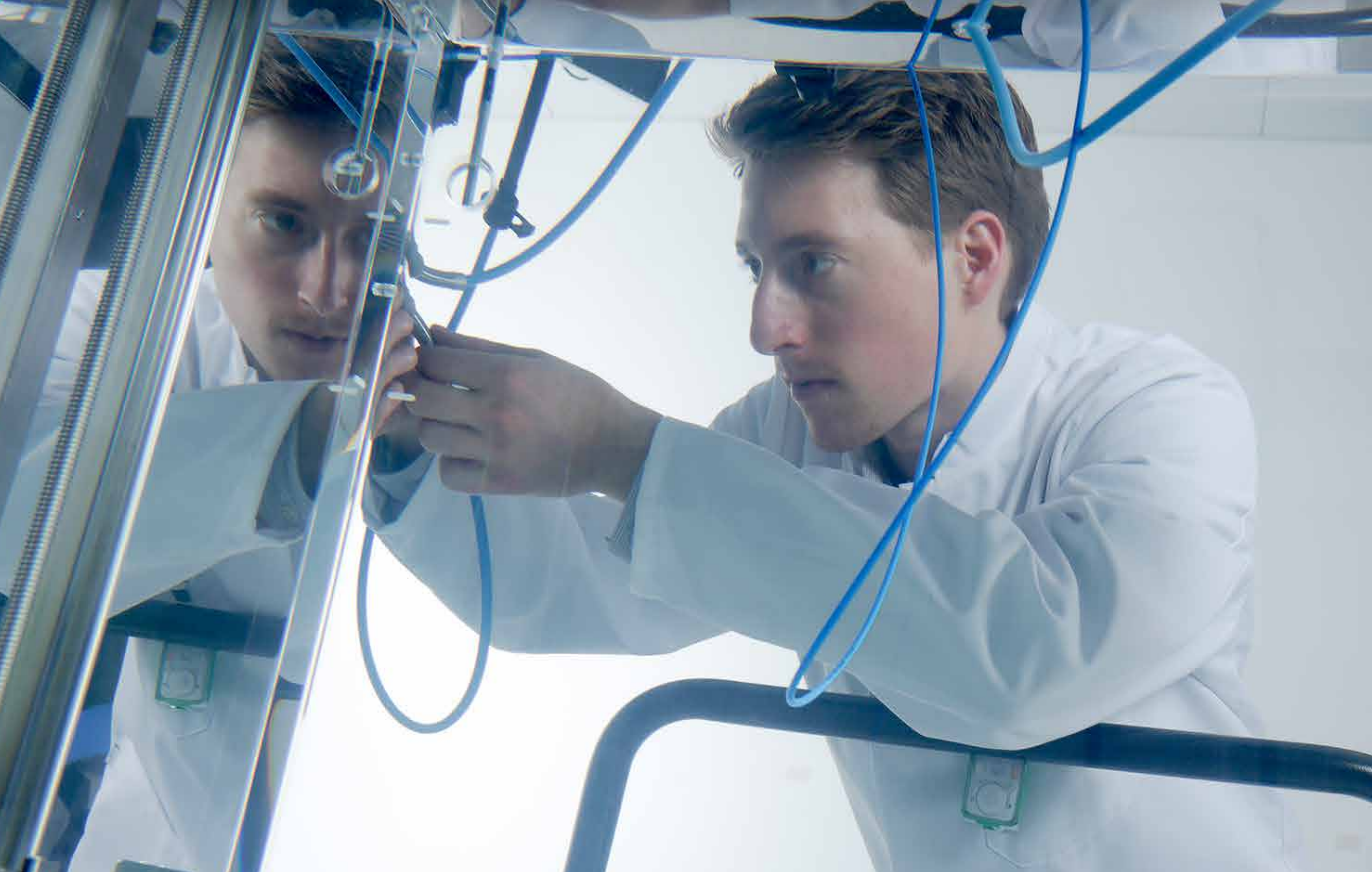


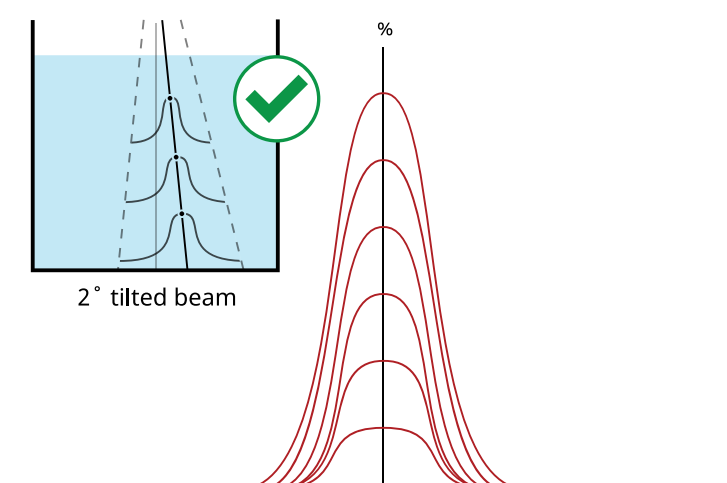
8 Features That Make the BEAMSCAN® Water Phantom Accurate for Measuring Small Fields



ONE

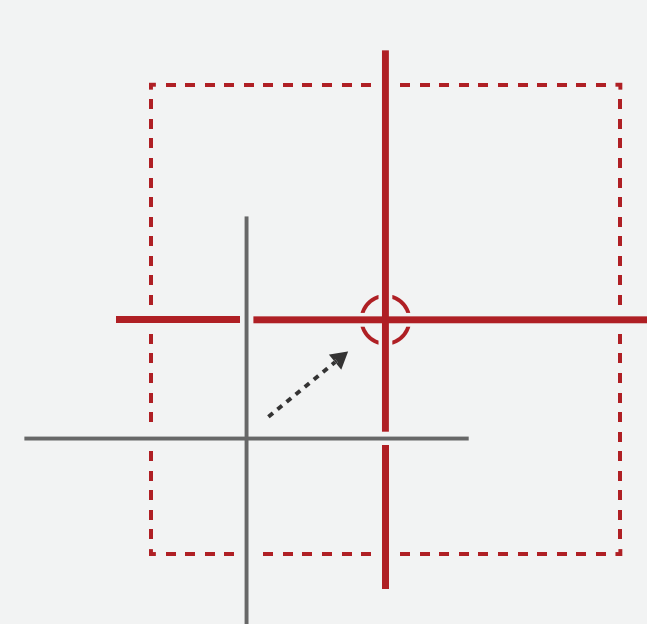
Beam Inclination Correction

The gantry angle of the linear accelerator can be imprecise because of gantry sag, causing deviations in profiles and percentage depth dose (PDD) curves in small-field dosimetry. This deviation leads to beam inclination. BEAMSCAN is the only water phantom that identifies and automatically corrects beam inclination, ensuring the most accurate measurements for small radiation fields.



TWO

Dose Maximum Search for Output Factors

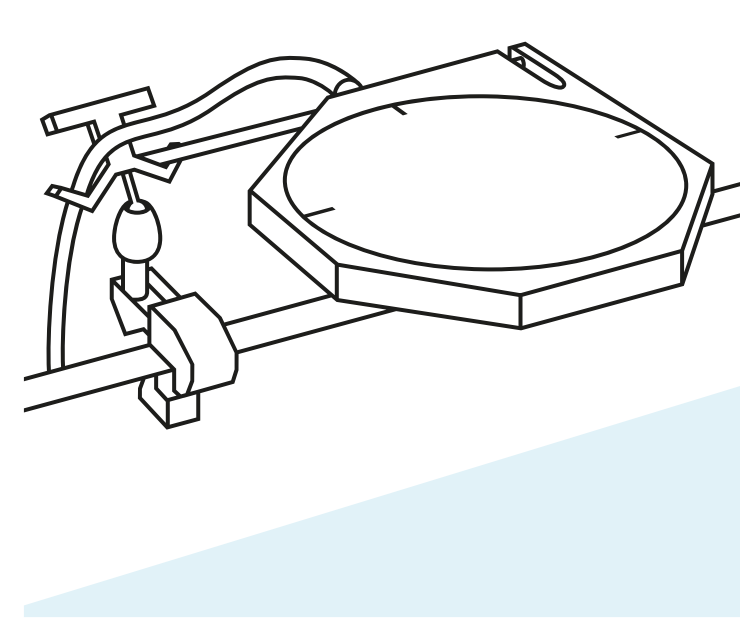


Positioning uncertainties caused by the collimator (e.g., yaws) can lead to slight shifts of the field center, resulting in imprecise output factor measurements, especially in small fields. The “Dose Max Search” function in the BEAMSCAN software automatically positions the detector in the dosimetric field center, allowing medical physicists to measure small-field output factors with highest accuracy.

THREE

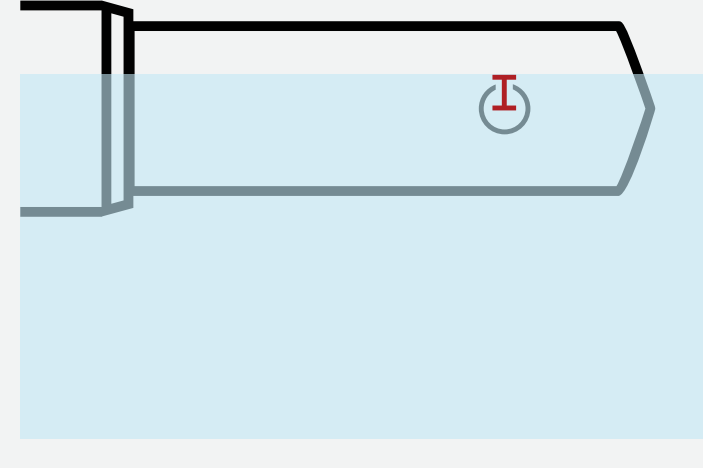
T-REF Reference Chamber

Placing a reference detector in a very small field without disturbing the scanning detector is a challenging task. The T-REF reference detector has been designed exactly for this purpose. As a thin, plane-parallel transmission chamber with a large diameter, it provides a strong, yet very low-noise reference signal, enabling perturbation-free small-field PDD and profile measurements in a BEAMSCAN water phantom. Mounted on the edge of the water phantom and centrally aligned to the beam, the T-REF chamber also requires no repositioning, saving users multiple trips into the treatment room.



FOUR

TRUFIX® Detector Clip-in and Auto EPOM Positioning

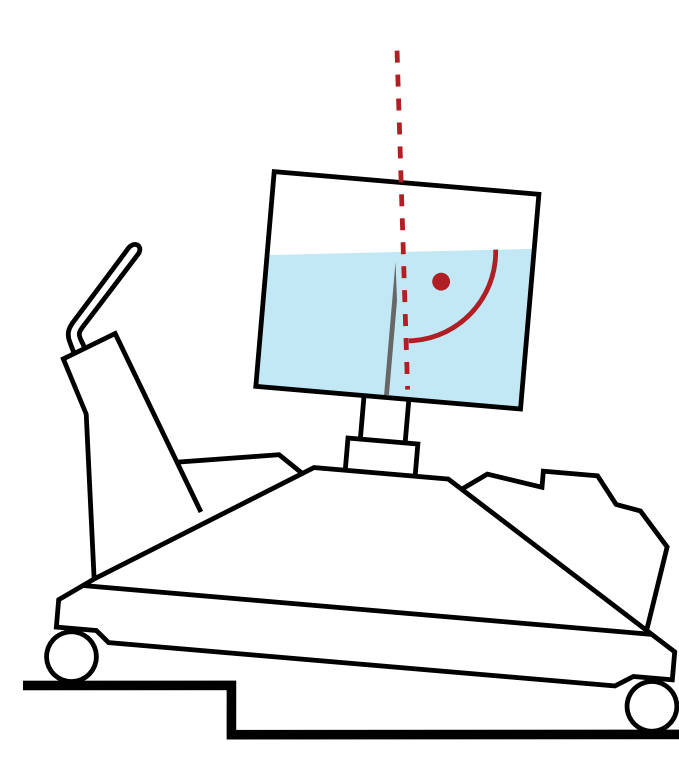


The patented clip-in TRUFIX system is designed for fast, precise mounting of the scanning detector both vertically and horizontally in the BEAMSCAN water phantom. It positions any PTW detector exactly at the effective point of measurement (EPOM), requiring no further adjustment. Detectors can also be quickly exchanged without having to readjust the EPOM. For some protocols, e.g., IAEA TRS-398, AAPM TG-51 or IPEM, a position correction is required as the defined measurement point is the chamber axis. The required shift can be selected and applied remotely via the software.

FIVE

Virtual Tank Leveling

The patented TRULEVEL™ function aligns the scanning axes virtually to the water surface without moving the water tank or scanning arms. Phantom alignment is fully automated and completed in two minutes—for all LINAC types and without any intervention from the user. Measurements on bore-type LINACs are equally convenient as TRULEVEL automatically compensates for couch pitch and tilt caused by the phantom weight on the couch. TRULEVEL thus eliminates the need for the user to adjust the phantom manually by reaching into the bore or using additional tools.



SIX

Auto Setup

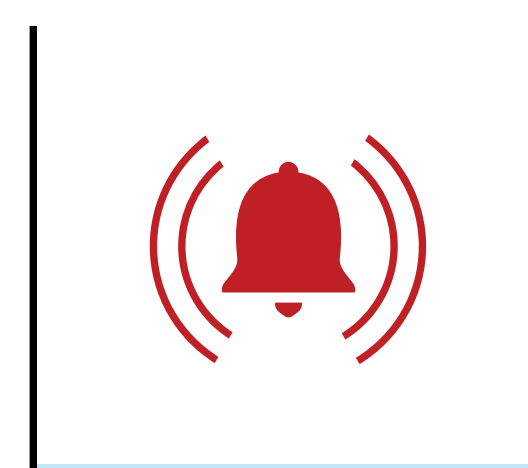


All essential setup procedures are automated—water filling, detector positioning, leveling, CAX and rotational correction—reducing the risk of critical setup and positioning errors caused by manual intervention. BEAMSCAN is ready for accurate small-field scans in less than 12 minutes—for every user.

SEVEN

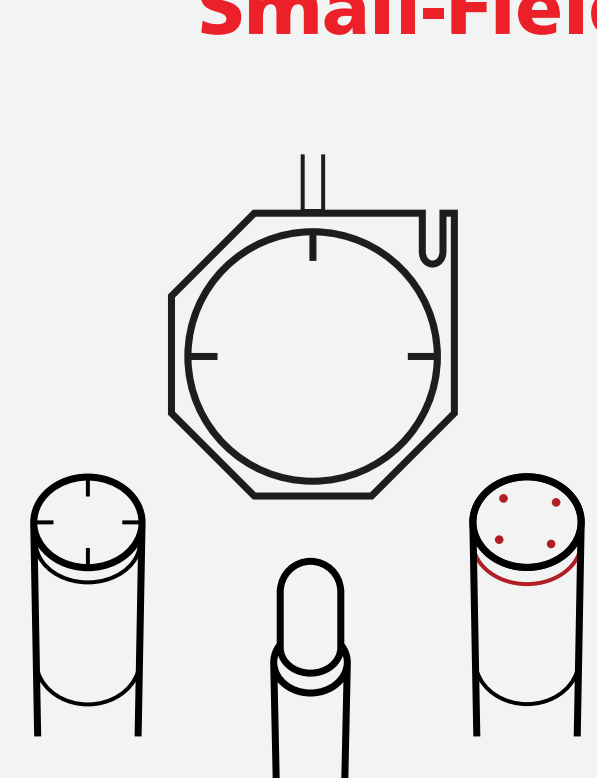
Water Level Check & Evaporation Control

The BEAMSCAN water phantom is equipped with a built-in water sensor for automatic water filling and integrated water level control and reminder. The water sensor not only detects slight but important water level changes, but also makes it possible to automatically perform TPR measurements without any further adjustments.



EIGHT

Small-Field Detectors for Any Measurement Task



There is no single detector that can be used for all field sizes and measurement tasks. Common guidelines on small-field dosimetry therefore recommend using more than one detector for small-field measurements. With the largest range of small-field detectors in the industry, PTW allows users to find and select the most appropriate detector for specific measurement tasks. All components—from phantom and electrometer to detectors, holders and connectors—are precisely matched to each other in order to achieve the high accuracy required for small-field dosimetry.

More Information



PTW Small-Field Dosimetry Application Guide

Practical introduction into small-field dosimetry



PTW Detector Selector

Online selection tool for PTW detectors



On-demand webinar: Best Practices—How to choose the right detector for your water phantom

Educational webinar providing guidance and practical tips on detector selection for reference, relative and small-field dosimetry

Visit www.PTWBEAMSCAN.com to discover more ways BEAMSCAN can solve your dosimetry challenges.

