

# Delta<sup>4</sup> Phantom+

*THE WIRELESS PHANTOM*



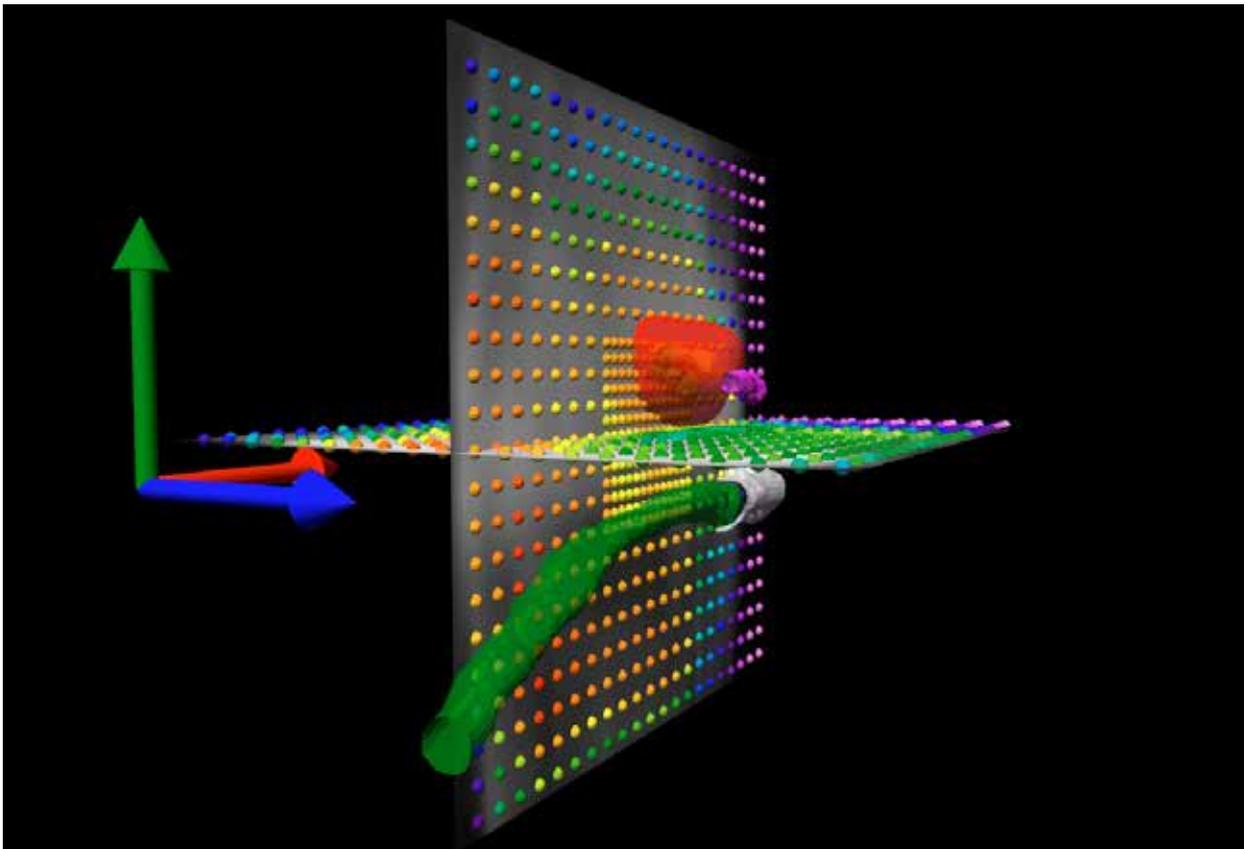
*PERFORM ACCURATE PATIENT QA IN LESS TIME THAN EVER!*

# Confidence in complex treatments

Modern radiation therapy uses complex plans with techniques such as IMRT, VMAT and Tomotherapy. A single plan can consist of more than a hundred control points and include MLC leaf movements, gantry and collimator angle rotations etc. in order to produce steep dose gradients within the patient.

To keep up with increasing complexity, a thorough verification of treatment plans is paramount for clinics to treat each patient with confidence and accuracy. For this purpose it is necessary to independently verify:

- The TPS dose.
- The transfer of data from TPS to the delivery system.
- The performance of the delivery system.
- The relationship of the delivered dose to the target and OAR's.



# Fast and accurate QA with Delta<sup>4</sup> Phantom+



The new wireless Delta<sup>4</sup> Phantom+ provides fast and accurate dose verification for your advanced treatment plans.

**Fast set-up.** The phantom is easily transferred to the treatment couch with the Delta<sup>4</sup> Trolley. You never have to lift the phantom!

**Alignment** is easily done in seconds with clear markers on the phantom that allow you to accurately position the Delta<sup>4</sup> Phantom+ in 6 dimensions.

**Instantly ready for measurement.** The Delta<sup>4</sup> Phantom+ transfers data via Wi-Fi and it is battery powered. There are no cable connections. Just turn on the power and you are ready to measure.

**Measure where it really matters.** The patented detector configuration with two orthogonal detector planes provides real measurements in the isocentric target region.

**Instant pass/fail analysis.** Since measurements are made in the target, the relevant dose is instantly available when the irradiation has been delivered. The delivered dose is instantly compared with the planned dose and analyzed against your pass/fail criteria.

**Independent Gantry angle verification.** An inclinometer gives you independent verification that the beams are delivered from the right angles.

**Machine QA.** In addition to patient QA the Delta<sup>4</sup> Phantom+ can perform checks of the beam constancy and the MLC performance.

# Next generation technology

## Unique detector configuration

- Isocentric measurements in two orthogonal detector planes
- Merge large fields up to 38 cm longitudinal
- Resolution 5 mm at isocenter, can be increased to 2.5 by merging

## Wireless

- Fastest set-up time
- Wireless communication (Wi-Fi)
- Battery operated



## Quick and easy set-up

The ergonomic Delta<sup>+</sup> Phantom<sup>+</sup> Trolley eliminates all lifting when transferring the phantom from the Trolley to the couch. The set-up and alignment of the phantom is done within seconds.

Furthermore, the Trolley serves as a neat and compact roll-and-store platform for the phantom.



# that works for your benefit

## Superior ScandiDos detector:

- Long term stable, detectors, eliminates re-calibration of relative sensitivity
- Isotropic response
- FFF compatible

## Easy levelling

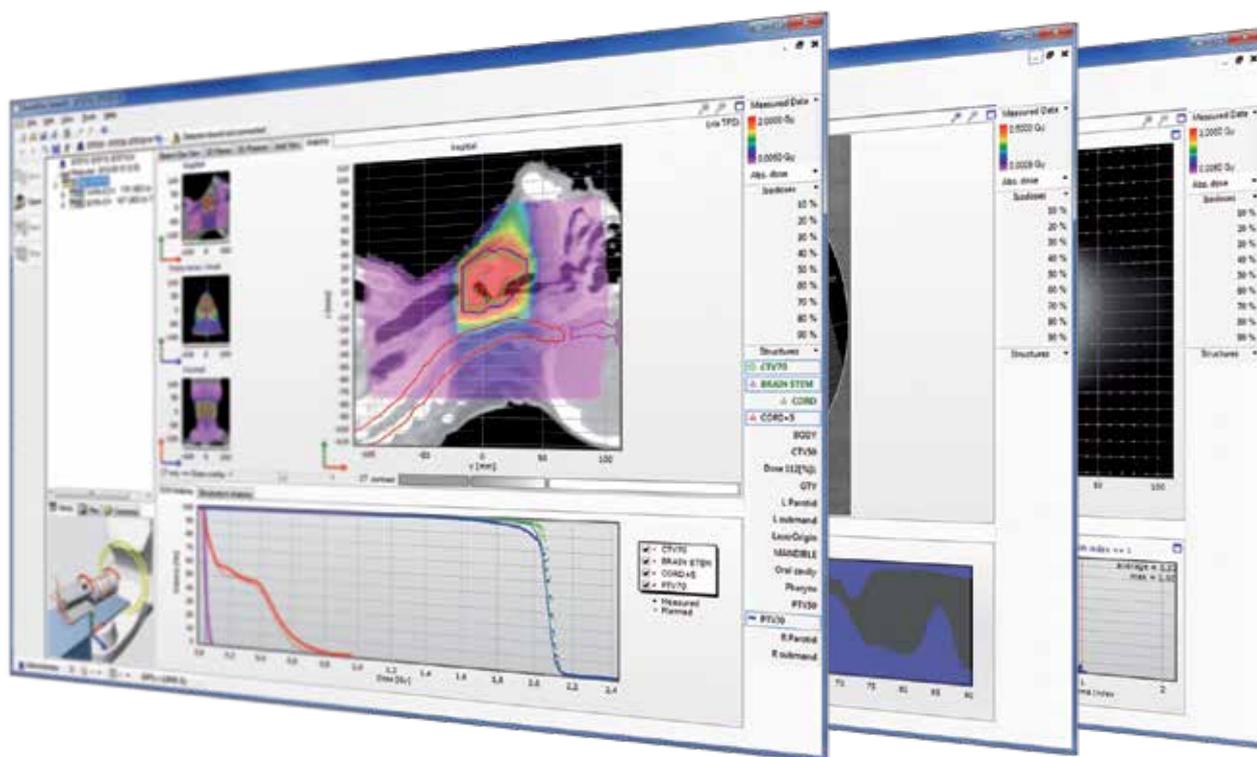
- Levelling with 3 or 4 point adjustment



## Absolute measurement

- Quick and accurate absolute dose verification
- Ion chamber measurements can also be performed in the same phantom

# Intuitive and loaded with analysis tools



## Integrated in the workflow

The Delta<sup>4</sup> software is known for its integration in the clinical workflow. TPS plans are easily imported together with TPS dose and structures.

## Intuitive

The genuinely intuitive software decreases your learning curve. You can easily navigate between patients, measurements and analysis and all the information you need is just a click away. The QA analysis is performed automatically as soon as the dose has been delivered instantly indicating pass or fail.

## Instant

Your QA results, including dose deviation, distance to agreement (DTA) and gamma index, are instantly available without any further processing and QA reports are easily customized to your specific needs.

## Powerful analysis

With unique 4D measurements you also have the data to analyze the delivered dose for fraction, beam arc or control point.

The delivered 4D dose can also be analyzed in the patient anatomy. The Delta<sup>4DVH</sup> suite of software modules provides unique analysis tools to find the clinical significance of a deviation.

# Technical specification

## Cylinder phantom

<b>Material</b>	PMMA; optional Plastic Water DT®
<b>Diameter</b>	22 cm
<b>Length</b>	40 cm
<b>Ion chamber insert in cylinder</b>	Inserts for common cylindrical ion chambers available

## Detectors

<b>Type</b>	p-Si
<b>Total number</b>	1069
<b>Layout</b>	Distributed on coronal and sagittal plane
<b>Max field size</b>	20 x 38 cm <sup>2</sup> (with merger of two consecutive measurements, otherwise 20 x 20 cm <sup>2</sup> )
<b>Distance between detectors</b>	
<b>Central area (6 x 6cm<sup>2</sup>)</b>	5 mm (or 2.5mm in longitudinal direction with merger of two consecutive measurements)
<b>Outer area</b>	10 mm
<b>Size (radial x axial)</b>	1 x 0.05 mm <sup>3</sup> = 0,00004 cm <sup>3</sup>
<b>Detector stability (6MV beam)</b>	Better than 0.1% per kGy, typically 0.04%/kGy

## Size and weight

<b>Total length</b>	71 cm
<b>Total weight</b>	27kg

## Compatibility

<b>Modalities</b>	Photon beams, with and without flattening filter
<b>Treatment Plan import</b>	Any Treatment Planning system that can export DICOM RT Plan and RT Dose, Structure

## Wireless Communication

<b>Wireless data communication protocol</b>	Wi-Fi 802.11 n
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## Battery operational capacity

	>4 hours
	Rechargeable Li-ion battery – Power supply for charging included

Technical specifications are subject to change without notice



ScandiDos is an innovative, cutting edge developer and manufacturer of quality assurance solutions and a world leader in dosimetry for radiation therapy. By developing tools for efficient QA, we help to make new and improved treatment techniques available. ScandiDos strives to be at the forefront of technology development to enable the rapid clinical adoption of the latest treatment modalities.

Contact us today, or visit [www.scandidos.com](http://www.scandidos.com) for more information.



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