

Automation.  
Speed.  
Precision.

PTW BEAMSCAN®



# Revolutionary Design. Fast Performance. Exceptional Precision.

## BEAMSCAN®

As the first truly automated, wireless 3D water phantom, BEAMSCAN® combines speed and precision. With its automated features and faster scanning speeds, it cuts commissioning time in half without compromising data quality and accuracy.



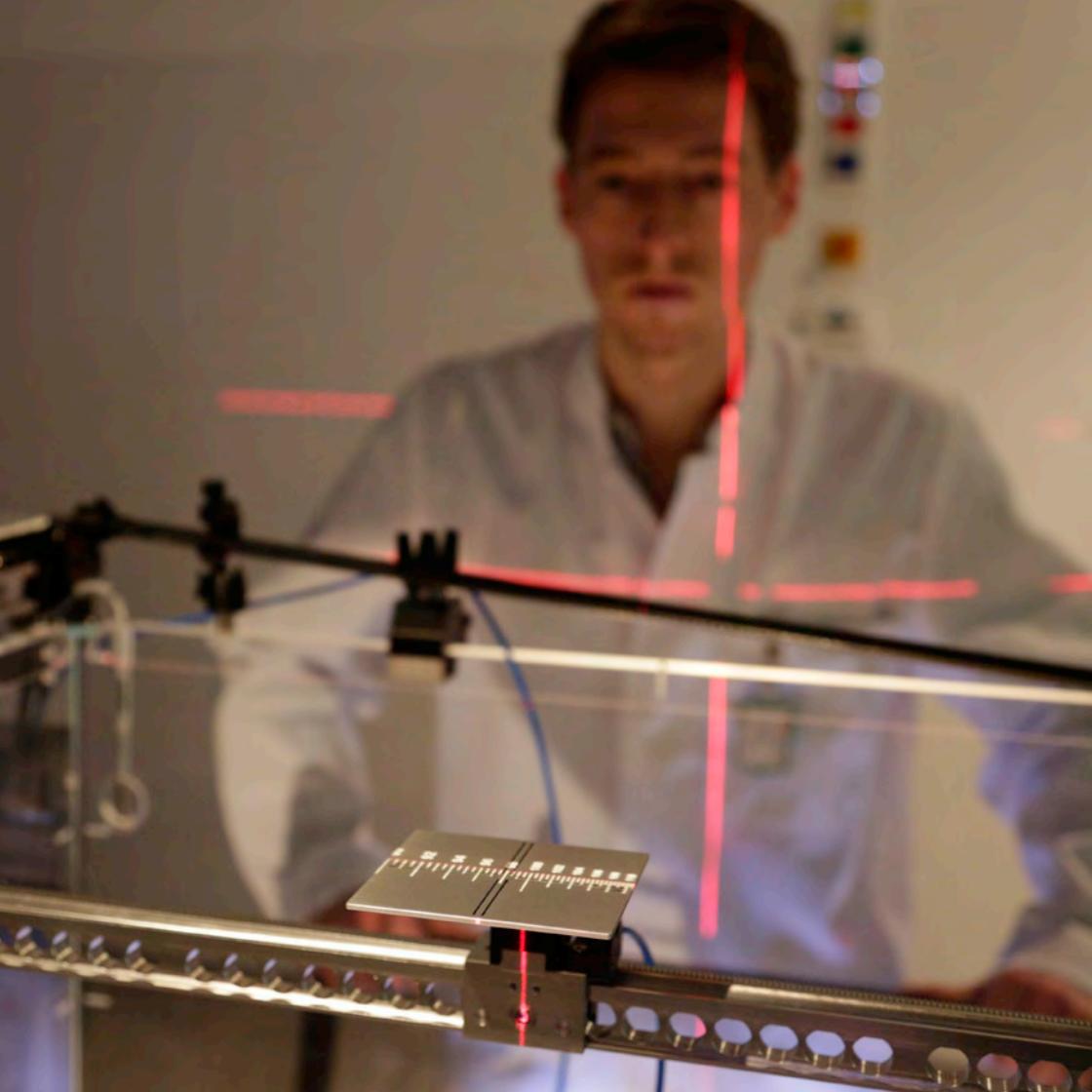
Setup:  
15 minutes



Leveling:  
2 minutes



Scanning:  
2x faster



# ... 3-2-1, ready!

## Installation in no time.

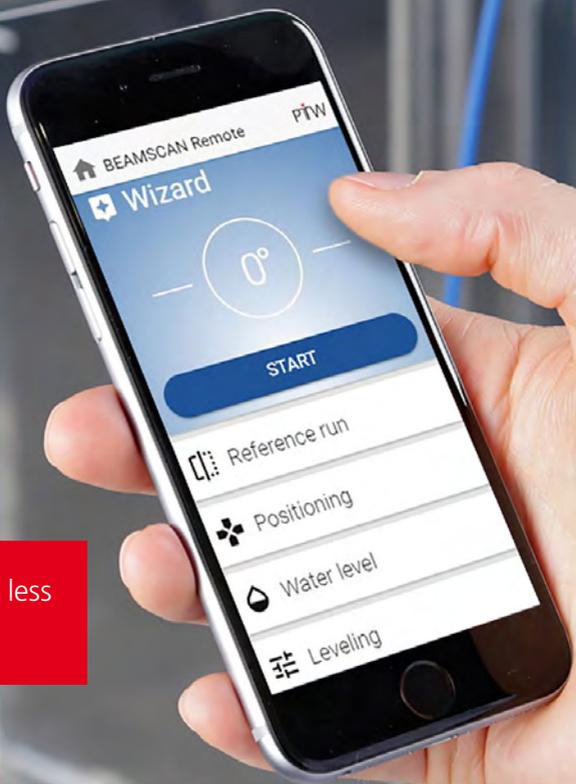
With all electronics and cables directly built into the system, the all-in-one BEAMSCAN® is ready for use straight out of the box. No cable runs, and no external devices to install. Move it into the treatment room, align and position it to the LINAC, plug in the power cable only, then set the SSD. Done.

# Fully automated.

The Wireless Auto Setup that needs no tools, no tank shifts.

Forget time-consuming setup routines. BEAMSCAN® provides you with a fully automated setup relying on algorithms rather than semi-automatic tools. Based on a three-point measurement and advanced mathematical calculations, TRULEVEL™, a unique patented auto leveling function, aligns the scanning axes virtually to the water surface without moving the tank or scanning arms.

Simply access the built-in BEAMSCAN® web server using the included iPod touch® or your own mobile device, and start the interactive BEAMSCAN® Wizard. It will guide you step by step through the system setup in the treatment room – intuitively and wireless. A simple touch is all it needs.



From setup to scan in less than 15 minutes



# The future is wireless.

WiFi connects.



No need to install or connect data cables every time you use your BEAMSCAN®. No tripping over cables in the treatment or control room. BEAMSCAN® has been designed for hassle-free wireless operation and data transfer, including everything you need to go wireless.

Want to remain wired? Simply connect to the LAN socket of your BEAMSCAN® system.



Perfect scans at  
maximum speed.

Precise as usual.  
Twice as fast.

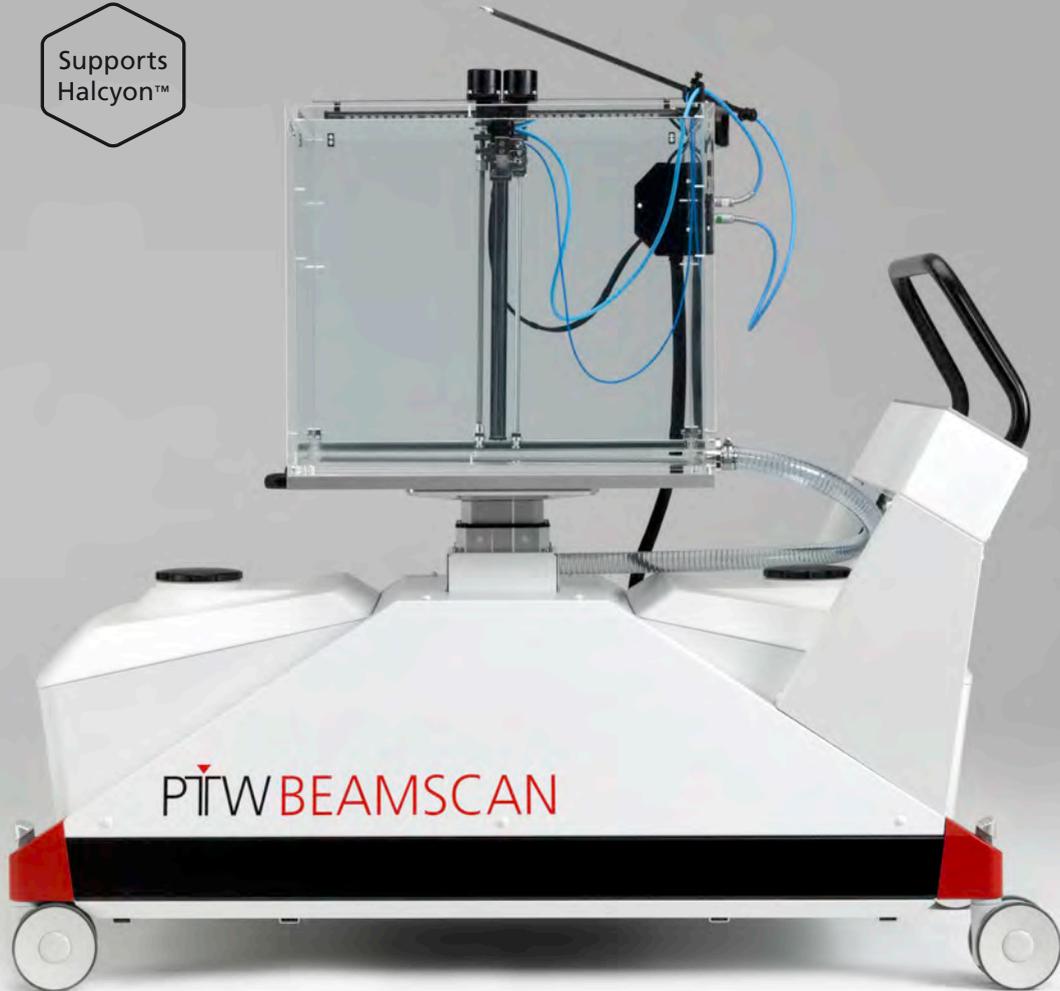
With enhanced mechanics and a new built-in state-of-the-art electrometer that features a scanning speed of up to 20 mm/s, BEAMSCAN® lets you scan profiles twice as fast as before without compromising quality and precision – at any scanning speed.

# Your workflow in mind.

Scan. Analyze. Monitor. Document.  
As simple as that.

BEAMSCAN® comes with a powerful, feature-rich software that makes it easy for you to collect, analyze, process and format your beam data the way you need it. Select from ready-to-use, TPS-specific task lists and perform multiple measurement tasks in one go. Export the results to the optional Track-it QA database to track machine performance over time and document the results as required, in less time.

Supports  
Halcyon™



# PTW BEAMSCAN®

## A quantum leap ahead.

- ▶ All-in-one, all built-in design
- ▶ Ready for use “out of the box”
- ▶ “Plug and go” installation – only one power cable to plug in
- ▶ Fully automated, wireless setup with BEAMSCAN® Wizard using iPod touch® (included) or any other mobile device
- ▶ Patented TRULEVEL™ auto leveling
- ▶ Wireless operation and data transfer
- ▶ Fast scanning (up to 20 mm/s)
- ▶ Continuous and step-by-step scanning mode
- ▶ Built-in web server for easy browser-based access
- ▶ WiFi and LAN connectivity
- ▶ Fully automatic water filling/draining
- ▶ Auto field alignment
- ▶ Advanced stainless steel worm drive with wave prevention
- ▶ Built-in, high-precision electrometer
- ▶ Reference-class Semiflex 3D ionization chambers as detectors, suitable for a wide range of field sizes
- ▶ TPR measurement already included
- ▶ Integrated evaporation control
- ▶ Easy clip-in detector installation with TRUFIX® for BEAMSCAN®
- ▶ “Click-fix” SSD adjustment tool
- ▶ Water tank with inclined bottom for complete draining
- ▶ Protective, water vapor permeable cover
- ▶ Robust swivel wheels with brakes – easy to move, easy to lock in place
- ▶ Ample wheelbase – no extra weight on turntable
- ▶ Also available as Duo model with separate water reservoir carriage



## Quick Overview

PTW BEAMSCAN®

**Description:** All-in-one 3D water scanning system with wireless auto setup and operation

**Applications:** LINAC Acceptance Testing, TPS Beam Data Commissioning, Monitor Calibration, Accelerator QA

**Ready for use, all included:**

- ▶ 3D water phantom with high-precision worm drive and wave prevention
- ▶ iPod touch® for wireless auto setup and operation
- ▶ Functional lift carriage with built-in water reservoir and high-speed pump for automatic water filling and draining
- ▶ Integrated control unit with intelligent web server, WiFi and LAN interfaces
- ▶ Built-in, state-of-the-art electrometer for fast, precise scanning
- ▶ Water sensor for auto filling/draining and TPR measurements
- ▶ Precise temperature sensor (PT100) and barometer for automatic T&P correction
- ▶ Semiflex 3D 0.07 cm<sup>3</sup> field and reference detectors
- ▶ Patented TRUFIX® clip-in detector mounting and positioning system, including "click-fix" SSD adjustment tool
- ▶ Water vapor permeable dust cover
- ▶ BEAMSCAN® software with RTPS data conversion and Track-it export
- ▶ 12-month warranty

**Options:**

- ▶ Track-it QA Data Management Software
- ▶ Halcyon™ Upgrade/Retrofit Packages
- ▶ Absolute Dosimetry for BEAMSCAN\*
- ▶ Film Dosimetry
- ▶ Positioning Platform for Tool-Free Manual Leveling
- ▶ T-REF Reference Detector for Small Fields
- ▶ PTW Radiation Detectors

**Connecting Systems:** BNT (Order No. L981475), TNC (Order No. L981476), M (Order No. L981474)

\*not available for sale within the USA/Canada

# Technical Specifications

## System

Total dimensions:	1548 mm (L) x 783 mm (W) x 1298 mm (min. height) / 1798 mm (max. height)
Total weight:	approx. 240 kg (empty), approx. 440 kg (filled)

## 3D Water Tank

Scanning range:	500 mm (horiz.) x 500 mm (horiz.) x 415 mm (vert.)
Wall thickness:	15 mm
Material:	PMMA

## Driving Mechanism

Type:	Stainless steel worm gear drive
Motor:	Three stepper motors
Scanning mode:	Continuous, step-by-step
Scanning speed:	up to 20 mm/s
Minimum step size:	0.1 mm
Maximum speed:	50 mm/s

## Smart Device for Wireless Auto Setup

Type:	iPod touch®
Connection:	WiFi
Access:	Standard web browser

## Lift Carriage with Built-in Water Reservoir

Moving range:	500 mm
Time for full lift:	45 s
Minimum step size:	< 1 mm
Pumping/draining time:	approx. 5 min (filling), approx. 7 min (draining)
Ground clearance:	84 mm

## Built-in Electrometer

Channels:	2
Resolution:	10 fA
Chamber voltage:	(0 ... ± 400) V, programmable in 1 V increments
Dynamic range:	2 pA ... 500 nA in three ranges
Time constant:	10 ms in all ranges
Non-linearity:	≤ ± 0.5 % acc. IEC 60731
Long-term stability:	≤ ± 0.5 % p.a. acc. IEC 60731
Reproducibility:	≤ ± 0.5 % acc. IEC 60731

## Semiflex 3D Field/Reference Detectors

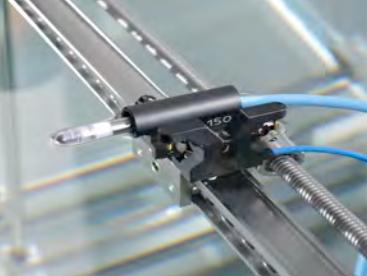
Type:	Vented cylindrical ionization chambers, waterproof, type 31021
Radiation quality:	<sup>60</sup> Co ... 50 MV photons, (9 ... 45) MeV electrons
Volume:	0.07 cm <sup>3</sup>
Field size:	(3 x 3) cm <sup>2</sup> ... (40 x 40) cm <sup>2</sup>

## TRUFIX® Detector Positioning System for BEAMSCAN®

TRUFIX® system:	Patented detector mounting and positioning system with “click-fix” SSD adjustment tool. Basic package (T21008.1.001) with base plate and holding devices for Semiflex 3D.
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## Minimum PC Requirements for BEAMSCAN® Software 4.0 or higher

Operating systems:	Windows® 7 Professional / Windows® 8/8.1 Pro / Windows® 10 Pro (x32/x64) with recent service packs and updates
Processor:	Pentium IV processor 2 GHz
Hard disk, RAM:	100 MB of free space for application software and 2 GB of free space for .NET Framework 4.5.1 • RAM: 2 GB
Screen resolution:	XGA (1024 x 768 pixels)
Network:	TCP/IP, Ethernet, 100 Mbit/s



[www.ptwbeamscan.com](http://www.ptwbeamscan.com)

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**PTW** THE  
DOSIMETRY  
COMPANY

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