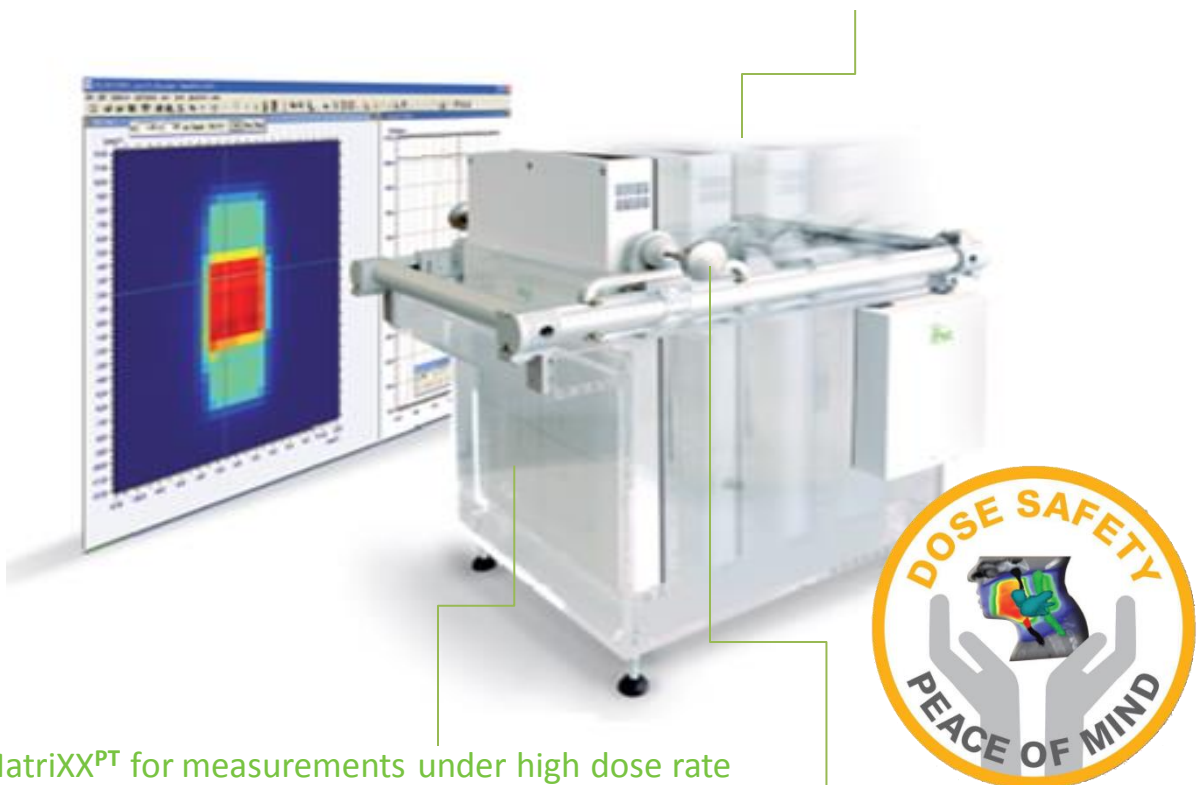


Patient Plan QA Device for Particle Therapy

Fast 2D and 3D Dose Measurement for Patient QA in Water

- Dedicated water phantom with motorized MatriXX^{PT} detector



- MatriXX^{PT} for measurements under high dose rate Proton beam type deliveries
- Patient QA in real water
- Ability to acquire more data for verification
- High positioning accuracy with IBA unique non-contact absolute position sensor

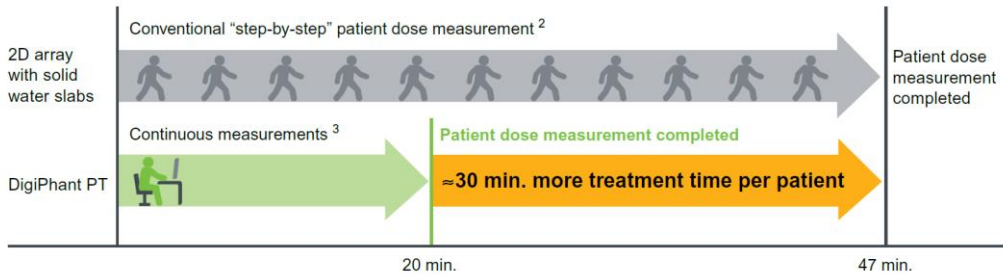
Efficient, Integration, Safety

- Patient treatment through Advanced 3D Plan QA in Particle Therapy
- The only system to combine 2D area detector with water phantom

Key Benefits

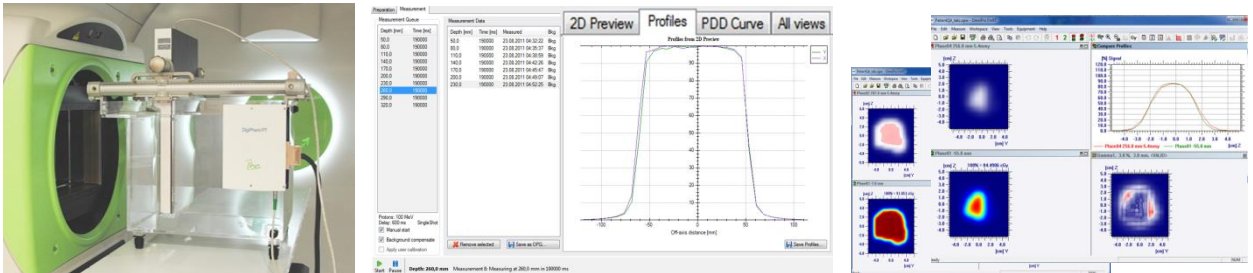
➤ Time Saving*

30 Minutes Faster Dose Measurement and Verification¹



- ¹ Actual patient dose measurements consist of 10 individual measurements of 2 min. each (one per depth dose)
- ² Conventional: Physicist 9x walks into treatment room and changes depth of solid water to simulate next water depth (20 min. measurements + 9 times ≈3 min. to open vault door, enter room, remove ...)
- ³ DigiPhantPT continuous process entirely operated from the control room, no walking into the treatment room

➤ 3 Steps and get more Patient QA dose data



Localize

Acquire

Analyze

➤ Patient QA in real water

- ⊕ Reduce artifacts and uncertainties from solid water phantoms
- ⊕ Feasible to collect PDD/3D dose by MatriXX^{PT} in short time

Your optimized solution for

- ✓ Unique 3D plan verification solution including a MatriXX^{PT} and a dedicated water Phantom system.
- ✓ Half the time needed for pre-treatment verification in comparison with methods using 2D Array detectors and solid water phantoms systems.

Fastest. most **Accurate.** most **Reliable.**

DigiPhant

Hardware	MatriXX ^{PT} and Dedicated Phantom
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Specifications of MatriXX^{PT}

Number of Chambers and Type	1020 vented pixel ionization chambers
Active Area	24.4 x 24.4 cm ²
Sensor Layout	Matrix in a plane arranged in a 32 x 32 cm grid
Pixel Distance	7.62 mm center to center
Chamber Size/ Volume	4.5 (∅) x 2 (h) mm/ 0.032 cm ³
Nominal Sensitivity	1.4 nC/Gy
Dose Rate Range	5mGy/s up to 150 Gy/s
Effective Point of Measurement	6 mm from surface
Recombination	<1% for all relevant clinically used proton beam currents (up ~5-7nA)
Sampling time:	100ms up to 5min

Specifications of Dedicated Phantom

Position accuracy	+/-0.5mm
Scanning speed	Up to 20 mm/sec
Scanning Range	310mm/ From 3cm up to 33cm WET

Key Features...

- Replaces time consuming manual solutions
- Measuring 2D and 3D dose distribution in water
- Quick Calibration
- Analysis of relative and absorbed dose
- Data storage and evaluation in OmniPro-I^mRT

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Protect,
enhance
and save
lives

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