



# Efficient Dosimetry for Proton Therapy

Zebra

Lynx PT

DigiPhant PT

## SaveLine Proton Therapy Center Patient Schedule PT ROOM 1

Date 7.14.11

Time	Patient	Indication	Exam	Room
6 am	Quality Assurance			
7 am	<del>Quality Assurance</del>			
7:30 am	<del>Quality Assurance</del>			
8 am	Smith James	HLN		
8:30 am	Agasto Hugo Mr	Prostate		
9 am	Allamy Roger, Mr			
9:30 am	Statton Ben, Mr			
10 am	Cox Barbara, Mrs	Brain		
10:30 am	Xin Li, Mrs			
11 am	Roby Martha, Mrs			
11:30 am	Tampino Goerogos, Mr			
12 pm	Zoto Jennifer, Mrs			
12:30 pm	Bungo Manny, Mr			
1 pm	Uguly Harry, Mr child			

# Why IBA Dosimetry?

IBA Dosimetry offers the full product range tailored to fit any Proton Therapy QA needs. PT treatment safety, as well as most efficient dosimetry and QA is the center of our high-end solutions. IBA's unique innovations for PT dosimetry are designed to minimize QA times and to maximize commissioning and patient throughput of busy PT centers.

## Fastest

- Significant reduction of commissioning time:  
Earlier start of patient treatments
- Faster daily QA: Higher patient throughput

## Most Accurate

- Highest resolution detector technology
- Unique dedicated QA solutions tailored for PT

## Most Reliable

- Complete QA solution from the leader in RT dosimetry
- Utilizing >20 years of PT experience and innovation

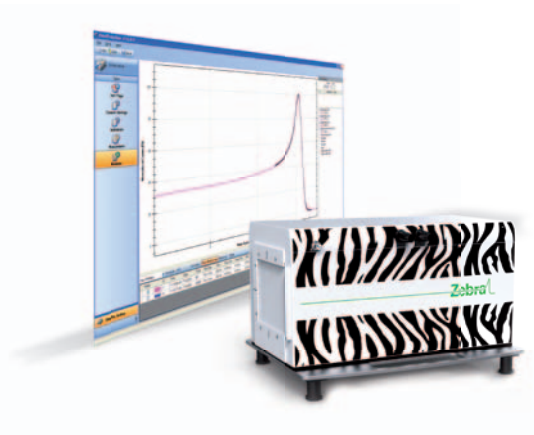
## Time Saving and Additional Patient Load with dedicated IBA Dosimetry Solutions

	Single scanning	Double scanning	Uniform scanning	PBS	Potential time saving	Additional patients <sup>1</sup>
Zebra for commissioning	✓	✓	✓	(✓)	<b>70 days per room</b> (commissioning)	<b>2310 patients per room</b> (70 extra treatment days)
Zebra for patient specific QA	✓	✓	✓	(✓)	<b>Up to 30 min. / patient</b> (patient specific QA)	<b>1 patient per day</b>
Lynx PT				✓	<b>45 min. every day</b> (machine specific QA)	<b>1.5 patients per day</b>
DigiPhant PT	(✓)	(✓)	(✓)	✓	<b>30 min. per patient</b> (patient dose QA)	<b>1 patient per day</b>
					<b>Total time saving up to: 1:45 hours per day</b>	<b>Total additional patients: 3.5 patients per day</b>

<sup>1</sup> Patient load calculation based on 5.5 working days per week; 14 treatment hours per day (2 shifts); 25 min. treatment fraction time; 33 fractions per day per room.

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

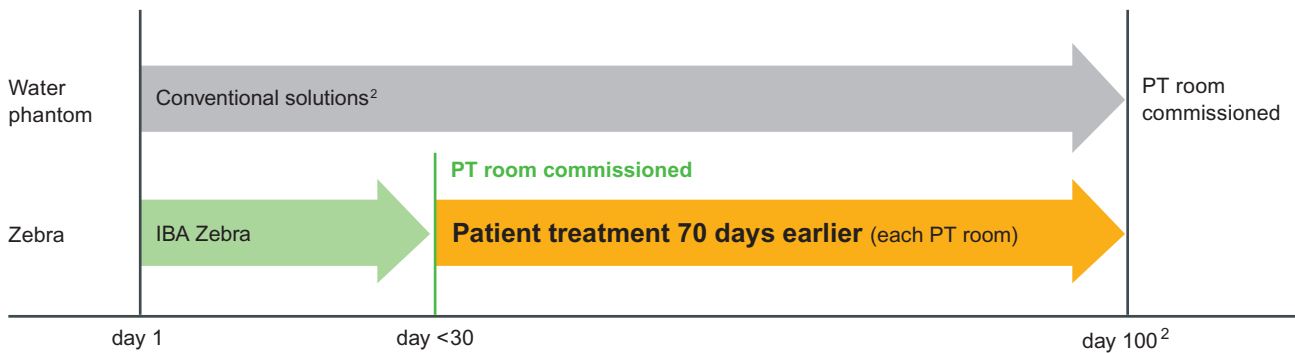
# 3x Faster Commissioning of PT Rooms, Higher Daily Patient Throughput



## Zebra

- For fastest commissioning and fastest daily consistency checks
- Unique multi-layer ionization chamber design:  
Instant uniform scanning of entire Percentage Depth Dose
- High spatial resolution: 180 independent plane parallel chambers
- Water equivalent material for equivalent scattering properties
- User-friendly interface to OmniPro-Incline software

## 3x Faster Commissioning, 70 Days Earlier Patient Treatment<sup>1</sup>



<sup>1</sup> Compared to commissioning using water phantom; <sup>2</sup> PT room commissioning typically takes 100 days with conventional solutions

*“The use of Zebra reduces the overall time of the commissioning and depth dose measurements in patient specific QA process down to about 10% of time that would have been needed with standard water phantom.”*

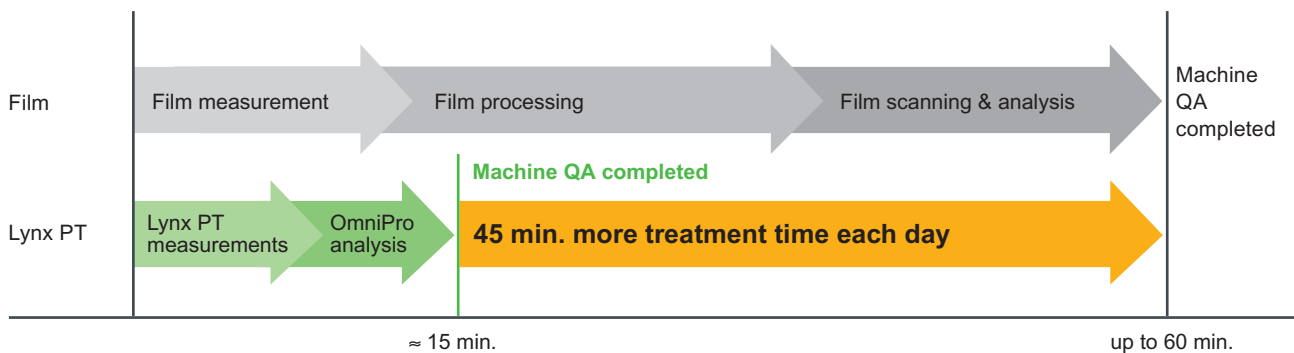
Tae Kyu Lee, Ph.D. et.al.: PTCOG 2011 Poster: “Clinical application of ZEBRA (MLIC) system with Uniform Scanning Proton Beam”  
Hampton University Proton Therapy Institute (HUPTI), Hampton, VA

# Highest Accuracy and Speed for Daily Machine Parameter Verification



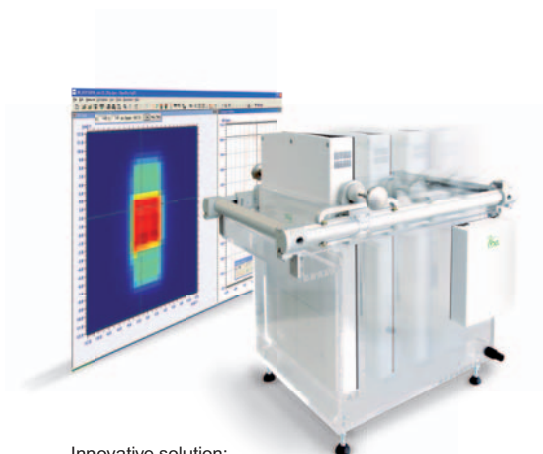
- Optimized for pencil beam scanning
- High resolution scintillator-based sensor
- Active surface of 30 x 30 cm<sup>2</sup>; effective resolution < 0.5 mm
- Single shot and movie mode measurements
- Compatible with OmniPro-I<sup>m</sup>RT, Dicom RT export supported

## 45 Minutes Daily Time Saving for Machine Parameter Verification



**Go Filmless:** Replace time consuming and cumbersome film QA without sacrificing resolution during commissioning and weekly checks of spot delivery.

# Patient Dose QA for Pencil Beam Scanning: 30 Minutes Faster Each Time!

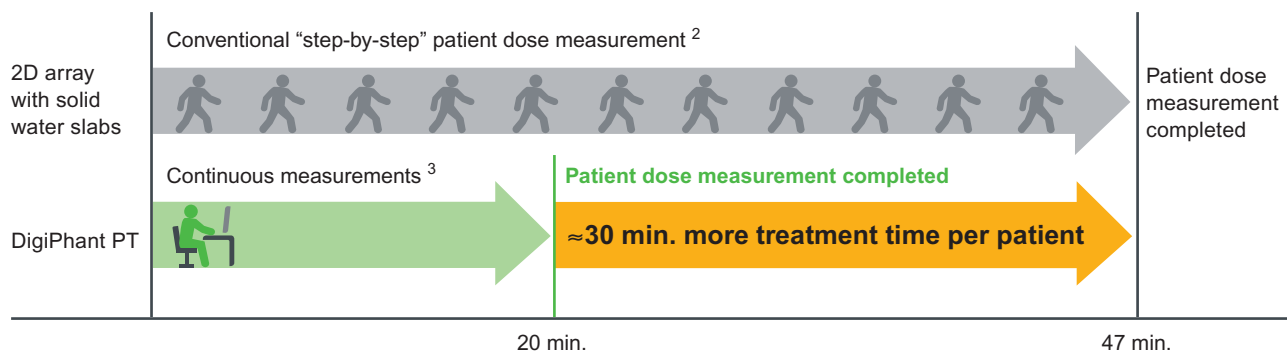


Innovative solution:  
Water phantom with motorized  
MatriXX PT detector

## DigiPhant<sup>PT</sup>\*

- Replaces time consuming manual solutions
- Dedicated MatriXX PT with 1020 ion chambers
- Measuring 2D and 3D dose distribution in water
- Analysis of relative and absorbed dose
- Data storage and evaluation in OmniPro-I'mRT

## 30 Minutes Faster Dose Measurement and Verification<sup>1</sup>



<sup>1</sup> Actual patient dose measurements consist of 10 individual measurements of 2 min. each per depth dose

<sup>2</sup> Conventional: Physicist walks 9 x into treatment room and removes one slab of solid water from the 2D array to simulate next water depth (20 min. measurements + 9 times ≈ 3 min. to open vault door, enter room, remove ...)

<sup>3</sup> DigiPhant PT continuous process entirely operated from the control room, no walking into the treatment room

# IBA Activities in a Nutshell

IBA delivers solutions of unprecedented precision for cancer diagnosis and therapy

## Radiation Therapy Portfolio – Fighting Cancer

- ▶ Advanced Particle Therapy solutions:  
Enabling the most precise and effective radiation therapy
- ▶ Industry leading QA and dosimetry solutions:  
Maximizing efficiency, minimizing errors, better outcomes
- ▶ Imaging fiducial markers for IGRT and IGPT:  
VISICOIL® enabling high precision tumor targeting in Radiation Therapy and Proton Therapy

## Diagnostics Portfolio – Safer Imaging, Earlier Cancer Detection

- ▶ Advanced quality assurance devices for Medical Imaging:  
Solutions for X-Ray diagnosis and patient-dose monitoring
- ▶ Unique expertise in the design of cyclotrons:  
Solutions for radiopharmaceutical tracers incl. production and distribution

## Sterilization & Ionization – Improving Hygiene and Safety of Everyday Life

- ▶ Electron accelerators and high power X-Ray solutions:  
Applied in many industries to sterilize medical devices, to cold pasteurize food or to improve polymer properties

IBA a Belgian company, is listed on the paneuropean stock exchange EURONEXT and its Annual Reports can be downloaded on the Website: [www.iba-group.com](http://www.iba-group.com).

Contact details:

[info@iba-dosimetry.com](mailto:info@iba-dosimetry.com)

### Europe, Middle East, Africa

IBA Dosimetry GmbH  
Bahnhofstr. 5  
90592 Schwarzenbruck, Germany  
Tel.: +49 9128 607 0  
Fax: +49 9128 607 10

### North America, Latin America

IBA Dosimetry America  
3150 Stage Post Drive, Suite 110  
Bartlett, TN 38133, USA  
Tel.: +1 901 386 2242  
Fax: +1 901 382 9453

### Asia Pacific

IBA Dosimetry Asia Pacific  
No.6, Xing Guang Er Jie Beijing  
OPTO-mechatronics  
Industrial Park (OIP),  
Tongzhou District  
Beijing 101111, China  
Tel.: +86 10 8080 9288  
Fax: +86 10 8080 9299