



# Advanced Surface Imaging for Proton Therapy

Confidence. Efficiency. Accuracy.

In position to make a difference



# Accuracy is the key to treatment success

*Catalyst PT™ is the leading SGRT solution that supports the entire proton therapy workflow from simulation to treatment.*

## **PERFORMANCE**

Provides submillimeter accuracy and high speed 6 DOF patient position verification to ensure the best possible treatment outcome while minimizing non-therapeutic dose.

## **DESIGN**

Designed from the ground up to meet the unique requirements of proton therapy.

## **INTEGRATION**

Automated workflows with the major proton therapy manufacturers including IBA and Mevion.

SIMULATION

PLAN

TREATMENT





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## EFFICIENT END-TO-END SGRT SOLUTION FOR PROTON THERAPY

- » Accelerates the treatment workflow by utilizing patient model and breathing data collected by Sentinel™ 4DCT during simulation.
- » Streamlines patient posture setup and positioning.
- » Enables gating to manage patient respiratory motion.
- » Monitors the patient during the entire fraction.

## DELIVERS PATIENT SAFETY & COMFORT

- » Integrated QA procedure ensures the system meets the accuracy requirements of proton therapy.
- » No markers on or around the patient.
- » Dose-free motion management.
- » Increases patient comfort by reducing the need for immobilization devices.

## HIGH CONFIDENCE THROUGH INTELLIGENT INTEGRATION

- » Large patient surface coverage to assist with patient setup.
- » Expandable field of view with additional cameras to avoid interference and provide patient coverage for non-coplanar couch positions.
- » Color projection during setup to quickly correct patient position and posture.
- » Motion management and respiratory gating automatically pause treatment.
- » Non-rigid algorithm can utilize the whole patient surface and does not require additional configuration.



IBA



*"Catalyst PT reduces the magnitude of initial setup errors and enhances our confidence in accurate dose delivery by aiding patient posture correction and active monitoring of patients during beam delivery. With Catalyst PT, we have also been able to minimize our x-ray imaging needs thus leading to reduced overall patient treatment times."*

Alonso N. Gutiérrez, PhD, MBA, Asst. Vice President and Chief Physicist at Miami Cancer Institute



MEVION

MEDAUSTRON



\*IBA and Mevion are trademarks of IBA International and Mevion Medical Systems.

# Delivering Accuracy in Proton Therapy

## SYSTEM DATA\*

### Light projection

- *Measuring light:* 405 nm (near-invisible violet)
- *Projection light:* 528 nm (green), 624 nm (red)

### Performance

- *Scan volume (X \* Y \* Z):*  
800 mm x 1300 mm x 700 mm
- *Measurement reproducibility:* 0.2 mm
- *Long term stability:* 0.3 mm
- *Frame rate:* 200 frames/s
- *Registration method:* Real-time, non-rigid with deformable models for computing 6 DOF isocentric shifts
- *Positioning accuracy:* Within 0.5 mm for rigid body
- *Motion detection accuracy:* Within 0.5 mm

\*Full system data upon request

## OUR MISSION IS GLOBAL IN SCOPE

C-RAD develops surface-guided imaging solutions for radiation therapy to allow highly accurate dose delivery to the tumor, and at the same time, to protect healthy tissue from unwanted exposure. Using high-speed 3D cameras combined with augmented reality, C-RAD supports the initial patient setup process and monitors the patient's motion during treatment to ensure high confidence, an efficient workflow, and improved accuracy. C-RAD monitors the patient's motion without the use of tattoos or additional imaging dose, to deliver the highest level of patient safety and comfort.

C-RAD. Inspiring excellence in cancer treatment

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