CATALYST⁺ PT

Advanced Surface Imaging for Proton Therapy

Intuitive & Simple Workflow
Clinical Confidence
Effortless Integration

In position to make a difference

C-RAD

Accuracy is the key to treatment success

Catalyst⁺PT™ offers a complete SGRT solution that supports the entire proton therapy workflow from simulation to treatment.

SIMULATION

PLAN

TREATMENT

PERFORMANCE

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

DESIGN

Delivers increased clinical confidence by identifying posture corrections and actively monitoring patients during treatment through advanced surface tracking designed to meet the unique requirements of proton therapy

INTEGRATION

Automated workflow and integrations for safe and efficient treatment, with major proton therapy manufacturers; unique patient and proton field synchronization and 6 DOF automatic robotic couch adjustments available

Confidence. Efficiency. Accuracy.

EFFICIENT END-TO-END SGRT SOLUTION FOR PROTON THERAPY

» Accelerates the treatment workflow by using patient set-up position 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

» Provides dose-free patient position verification for non-coplanar beams

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 EFFORTLESS INTEGRATION

» Large patient surface coverage to assist with patient setup.

» Large field of view and optimized camera positions 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 uses the whole patient surface

» Multi-camera configuration available to support imaging in the external imaging position

"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

CATALYST⁺ PT

Delivering **Accuracy** in Proton Therapy

SYSTEM DATA

Physical dimensions (master and side system)
- Size (W x D x H): 625 mm x 230 mm x 200 mm
- Weight: 9.5 kg

Power
- Input voltage: 100 – 240 VAC
- Frequency: 50/60 Hz
- Power consumption operating/scanner: 100 W
- Power consumption xstandby/scanner: 25 W

Environment
- Operating temperature: +10 °C to +35 °C (50 °F to 95 °F)

Light projection
- Measuring light: ~405 nm (blue)
- Projecting light: ~528 nm (green) and ~624 nm (red)

Performance
- Optical scanning technology: Structured light
- Maximum scan range (relative isocenter): $\Delta X = 1.0$ m, $\Delta Y = 1.4$ m, $\Delta Z = 1.2$ m (surface area = 1.4 m^2)
- Typical frame rate 3D: 15 Hz
- Positioning accuracy: Within 0.5 mm for rigid body
- Motion detection accuracy: Within 0.5 mm for rigid body
- cRespiration detection accuracy: Within 1 mm
- Registration methods: Real-time, non-rigid with deformable models for 6 DOF isocentric shifts

ABOUT C-RAD

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.

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