

CATALYST⁺ HD FOR RING GANTRY

BETTER POSITIONING FOR BETTER TREATMENT



Safe and efficient patient treatment is our common goal.

External radiation radiotherapy has revolutionized the way we treat patients with tumors—and the more accurate it is, the better the results.

Precise positioning is the cornerstone of patient safety, avoiding unprescribed doses and contributing to favorable outcomes through highly specific targeting of the tumor. But how do you continuously hit the mark in long, complex treatments? How can this be integrated into a workflow that doesn't waste time or compromise patient safety and treatment efficiency?

OUR ANSWER: THE CATALYST⁺ HD SYSTEM

The Catalyst⁺ HD Ring Gantry is an advanced SGRT (Surface Guided Radiation Therapy) that captures and analyzes the patient body surface at all times.

The conventional setup outside the gantry uses only three points on the patient's body. This makes it impossible to detect a postural error or misalignment of the extremities, and correction of setup errors must be done manually, making the process even more time-consuming.

With Catalyst⁺ HD, we use continuous 3D surface monitoring and compare the current body posture to a previously recorded reference. The SGRT covers the entire body surface and provides technicians with interactive visual guidance through a color map projected during setup. After the posture correction and precise isocenter alignment, the need of imaging and reimaging can be reduced.

It all happens in real-time and with dose-free monitoring. In short, improved efficiency without added risks to patient safety.

With the exceptionally large FOV, Catalyst⁺ cameras provide the full picture of the treatment at setup outside gantry as well as at treatment inside gantry. As a result of the large scan volume, projection and the advanced registration properties of Catalyst⁺ the entire workflow can be supported with a single scanner. The Catalyst⁺ HD has two additional side scanners for optimal positioning.

Because the scanner is installed outside the gantry, you can control patient positioning as part of a moving treatment and monitor posture changes inside and outside the gantry.

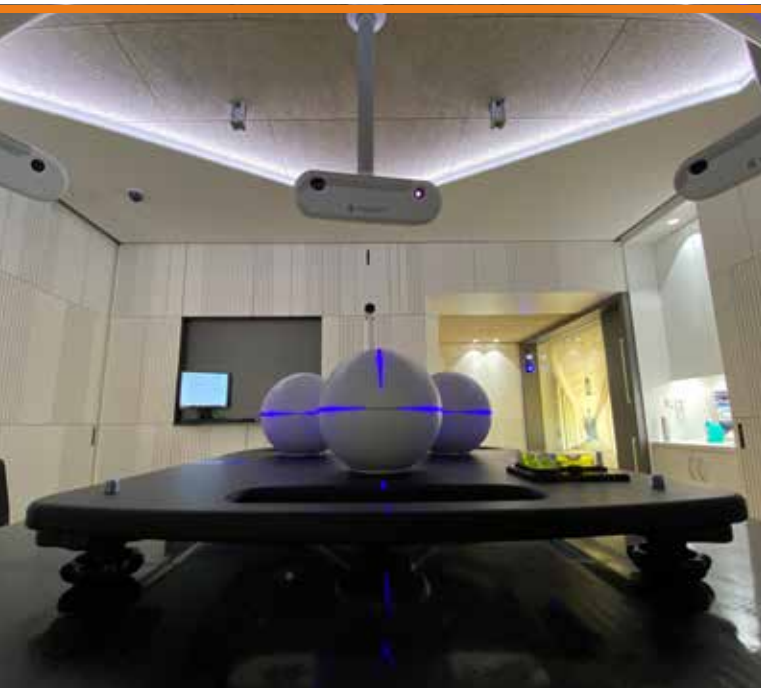
The external installation also eliminates the potential risk of collisions during treatment and prevents problems resulting from placing additional technology inside the gantry.

Workflow excellence and ease of use.

We are proud that our positioning accuracy is within 0.5 mm for a rigid body. By monitoring movements within the fraction in real-time, any patient movement exceeding the threshold triggers a response. The non-rigid algorithm performs surface and volume calculations simultaneously, ensuring robust isocenter precision.

And the Catalyst⁺ is able to simultaneously support both manual DIBH activation and 6DOF patient monitoring. The system also supports breath hold and free breathing modes, optimizing breathing patterns throughout treatment.

The workflow is patient-centric, with augmented reality color projection, real-time feedback, and audiovisual coaching. Catalyst⁺'s visual guidance for respiratory gating has already been shown to improve intrafraction reproducibility and increase patient compliance. DIBH is becoming the standard of care in left-sided breast cancer, reduces non-prescribed dose intake, decreases complications, and lowers mortality.



Catalyst is already changing lives, and we've made it even better.

We've developed the Catalyst⁺ HD Ring Gantry based on input from customers – physicians, medical physicists, nurses and engineers who are already using Catalyst in hospitals. Today, each gantry solution is tailored specifically to the needs of its users, and we're excited to see the improvements in care.



ARE YOU READY FOR BETTER THERAPY THROUGH BETTER POSITIONING?

Halcyon® System and Ethos™ Therapy System*

The Halcyon and Ethos systems are ring gantry versions from Varian.* Today, Catalyst⁺ HD Ring Gantry supports these gantries to provide an additional level of treatment accuracy and efficiency for when you choose DIBH treatments.

Benefit highlights of Catalyst⁺ HD Ring Gantry

Motion Management

cMotion's intrafractional motion detection features real-time motion management.

And what about the DIBH technology?

cRespiration provides a breath hold system on these ring gantries.* Our experts will be happy to come to you and offer such a solution if you need it.

Key features

- Color projections directly onto the patient with high precision and accuracy make it easy to identify and correct a wrong posture.
- Manual DIBH Gating.*
- Multiple audiovisual coaching device options.

New features

- Full workflow support. From setup to treatment procedure, the monitoring process is streamlined to work in harmony with the machine.
- Optimized camera settings. The positioning system is your eyes when it comes to treatment alignment. We fine-tuned the settings to the gantry to ensure every tiny detail is taken care of.
- Better Quality Assurance. Continuous quality monitoring is the cornerstone of consistent treatment quality. We have enhanced the QA process to provide a highly integrated approach to sustained excellence.



CATALYST⁺ HD FOR RING GANTRY

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:** 300 W
- **Power consumption standby:** 75 W

Environment

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

Camera

- **Resolution (W x H):** 1920 x 1200 pixels (2,3 M pixels)

Performance

- **Optical scanning technology:** Structured light.
- **Maximum scan range at setup position (relative external isocenter):** $\Delta X = 1.0\text{m}$, $\Delta Y = 1.8\text{m}$, $\Delta Z = 1.0\text{m}$ (Max Z positive range 0.5m, min Z negative range -0.5m).
- **Positioning accuracy Catalyst⁺ HD:** Within 0.5 mm for rigid body.
- **Motion detection accuracy:** Within 1 mm for rigid body when couch is in fixed position during treatment.
- **Respiration detection accuracy:** Within 1 mm
- **Registration Methods:** Real-time, non-rigid with deformable models for 6 DOF isocentric shifts.

Catalyst⁺ HD is now available for multiple ring gantries, including the following Accuray systems: TomoTherapy® and Radixact® and these Varian systems: Halcyon® and Ethos™. * We're happy to help you choose the best option for your patients.

CONTACT US TODAY:

C-RAD AB (publ)

C-RAD Positioning AB

Sjukhusvägen 12K, SE-753 09 Uppsala, Sweden
Telephone +46 18-66 69 30
www.c-rad.com

C-RAD Inc.

70 SE 4th Ave, Delray Beach, FL 33483, USA
Telephone: +1 561 742 9260
www.c-rad.com

C-RAD GmbH

Wittestr. 30 K, 13509 Berlin, Germany
Telephone: +49 30 609847560
www.c-rad.com

C-RAD

Suite 1308, Bao Hua Tower, 13/F,
No 1211 Changde Road (Changshou Rd.),
Putuo District, Shanghai,
P.R. China, 200060

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