

# ProBeam® 360°

PROTON THERAPY SYSTEM



8 & more

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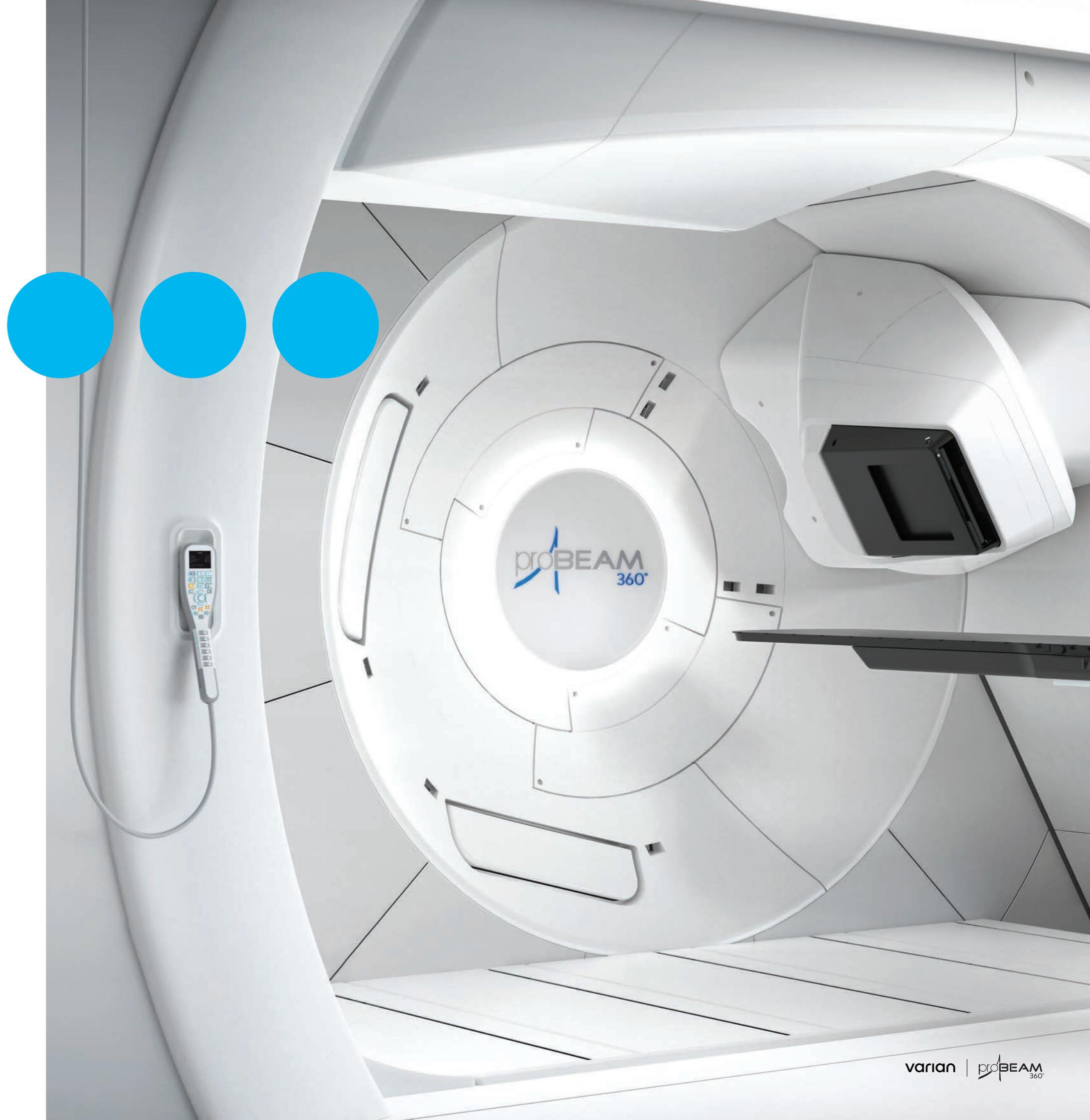
# ProBeam 360° Proton Therapy System

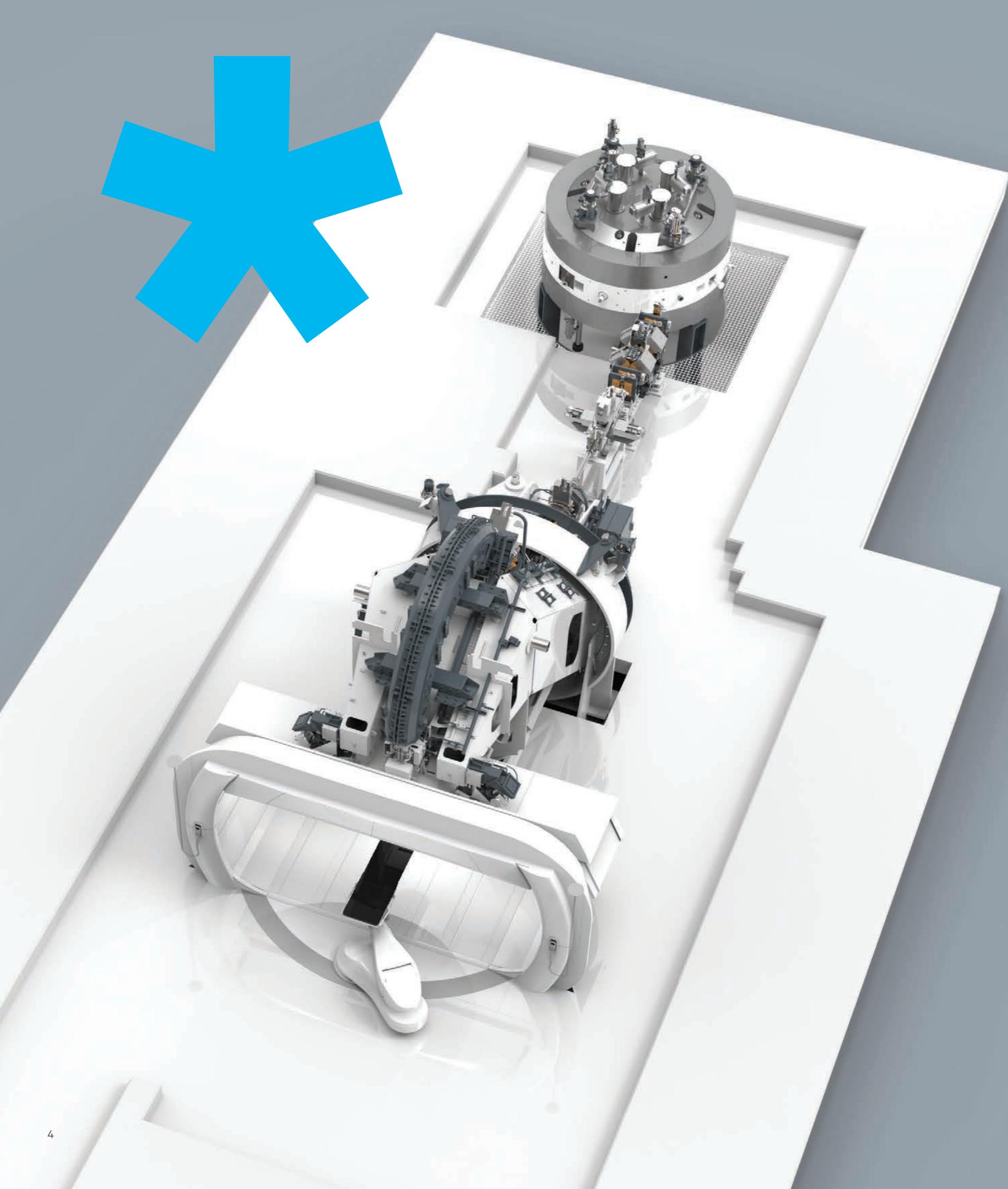
**Best-in-class for today.  
Designed for the future.**

With proton therapy's demand increasing 20% every year, today's solutions must be designed to efficiently treat the growing number of patients.

That's why we built the ProBeam® 360° Proton Therapy System—to increase access to this advanced treatment now, with a future-forward design to enable next-generation treatments.

The ProBeam 360° system is fully-integrated, offering a 360-degree gantry, ultra-high dose rates, and exceptional precision—all available in compact single-room and multi-room configurations with a **significantly smaller footprint**.





## \* Maximum impact. Minimal footprint.

The ProBeam 360° system offers uncompromised clinical capabilities with high dose rates, a 360-degree gantry, and exceptional precision—all within a **30% smaller footprint and 50% smaller volume, resulting in 25% lower vault construction costs**<sup>†</sup>. This compact design makes proton therapy more accessible, especially for those centers with space and budget constraints.

The system was designed for space efficiency. The 360-degree gantry structure is significantly smaller and weighs 70% less than its predecessor. The length of the beamline for a two-room system was shortened by 14 meters, with even greater reductions in length as the number of rooms increases.

Although the system is smaller in size, the treatment room is designed with the patient in mind, allowing ample space for clinical staff and equipment. This also provides sufficient area for a variety of treatment positions since the couch can be rotated 180-degrees around isocenter.

<sup>†</sup> Actual size and cost savings depend on system configurations and facility design.

# Differentiators that deliver

## Increased Efficiency

The ProBeam 360° system is designed for high operational efficiency. The 360-degree gantry and true end-to-end system integration improve workflow efficiency, leading to fast door-to-door treatment times and increased capacity.

Additionally, the ProBeam 360° system shares a common workflow and user interface with other market-leading products from Varian, making it easier to train and recruit staff.

## Door-to-Door Treatment Times for the ProBeam® System

Case Examples	Number of Fields	Door-to-door Treatment Time
Lung	2	11:51
Lung	3	17:00
Pancreas	2	11:41
Brain	4	16:26
Brain	3	13:00
CSI	2	21:30
Prostate	2	12:08
<b>Average</b>	<b>2.6</b>	<b>&lt;15 minutes</b>

Data collected from California Protons Cancer Treatment Center (CPCTC), 2018

## 360-Degree Gantry

Higher plan conformity can be achieved by using more fields\*, and multi-field and non-coplanar treatments are becoming more common. A 360-degree gantry becomes increasingly important for adaptive therapy, proton SBRT, and next-generation therapies such as proton arc and ultra-high dose rate treatments.

## 200° Gantry

- 1 CBCT (if available) / patient positioning
- 2 Deliver first 2 beams
- 3 Therapist enters treatment room
- 4 Rotate couch 180°
- 5 CBCT (if available) / patient positioning
- 6 Deliver last beam

## ProBeam 360°

- 1 CBCT / patient positioning
- 2 Deliver 3 beams

**45% faster**

\* Frank, Steven J. et al. "Multi-Field Optimization Intensity-Modulated Proton Therapy for Head and Neck Tumors—A Translation to Practice." *International journal of radiation oncology, biology, physics* 89.4 (2014): 846–853. PMC. Web. 9 Oct. 2018.

## High and Ultra-High Dose Rates

The evolution of radiotherapy has pushed dose rates higher, and proton therapy is now leading this trend. The ProBeam 360° system features the most powerful particle accelerator available to treat cancer.

When applied with exceptional precision, high dose rates can:

- Reduce treatment time
- Support hypofractionation and proton SBRT
- Reduce effect of tumor motion

What's more, we expect next-generation proton therapy to employ even higher and ultra-high dose rates.

## Fast Dose Delivery in <5 Seconds per Field<sup>†</sup>

RapidScan™ Technology revolutionizes motion mitigation, delivering each field within a single breath-hold for most patients.<sup>†</sup> RapidScan, when used in conjunction with the Eclipse™ treatment planning system, simultaneously optimizes treatment plan quality and delivery time.

The ProBeam 360° system with RapidScan:

- Simplifies conventional procedures required to treat moving targets
- Increases the number of patients who can comply with breath-hold treatments
- Reduces treatment time without sacrificing quality

## Exceptional Precision

The ProBeam 360° system combines Varian's best-in-class imaging and high-definition pencil beam scanning to ensure exceptional precision. High quality imaging, including iterative CBCT, can be used to know when to adapt the treatment plan for changes in tumor size and morphology as treatment progresses.

The ProBeam 360° system features:

- Advanced reconstruction algorithms providing superior image quality with better visualization of soft-tissue and greater accuracy
- Large imaging field of view for CBCT (51.5 cm x 26 cm)—a critical feature for visualizing tumors in thoracic, abdominal, and pelvic regions
- Scanning and imaging systems are both part of the gantry to ensure they are always aligned. The gantry motion and positioning accuracy is highly repeatable, contributing to overall system precision



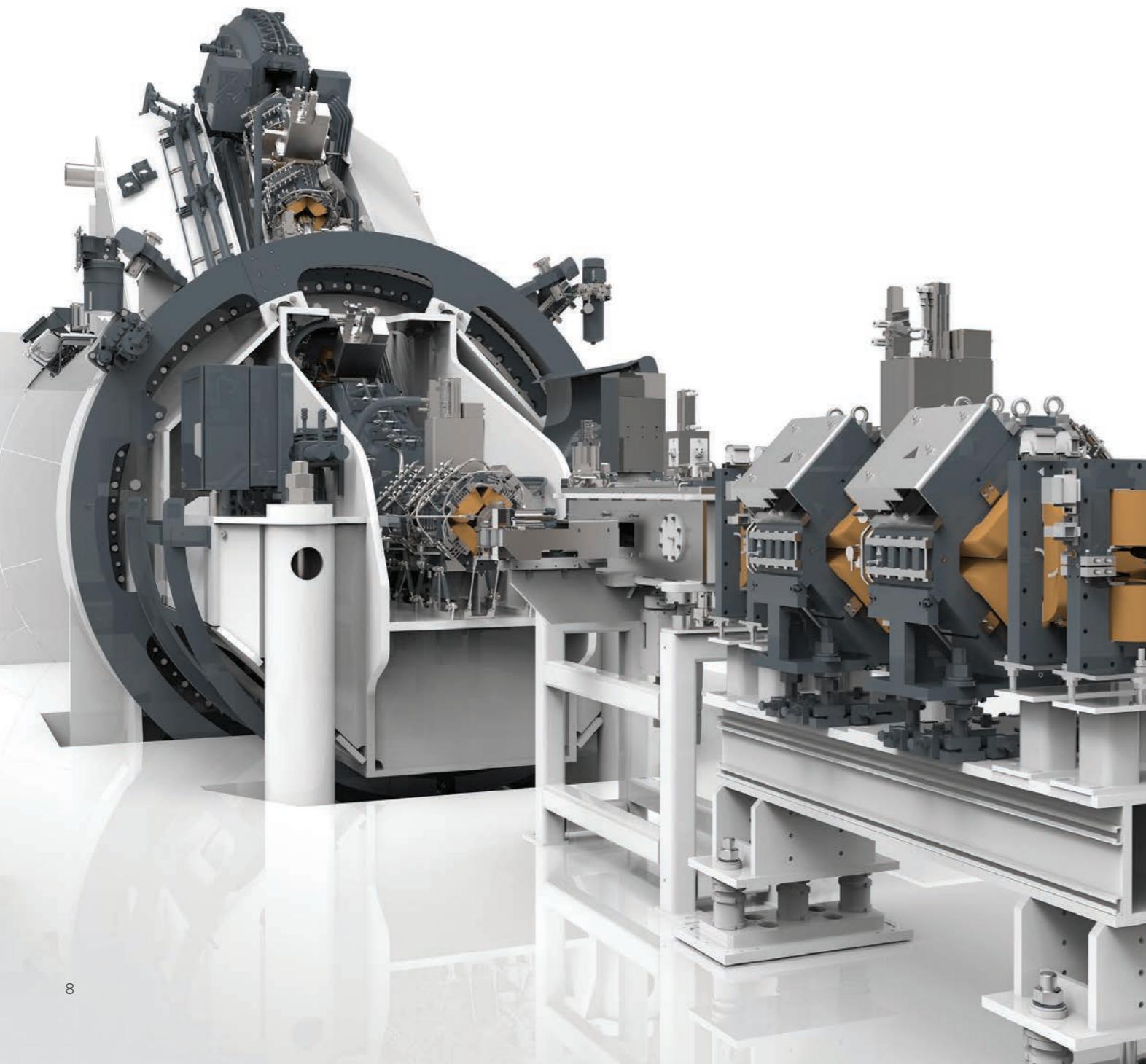
Examples generated from the same x-ray hardware acquisitions, using identical x-ray techniques. Traditional CBCT (top) and Varian's Iterative CBCT (bottom).

<sup>†</sup> For targets <5cm in diameter, with standard fractionated dose and beam arrangement

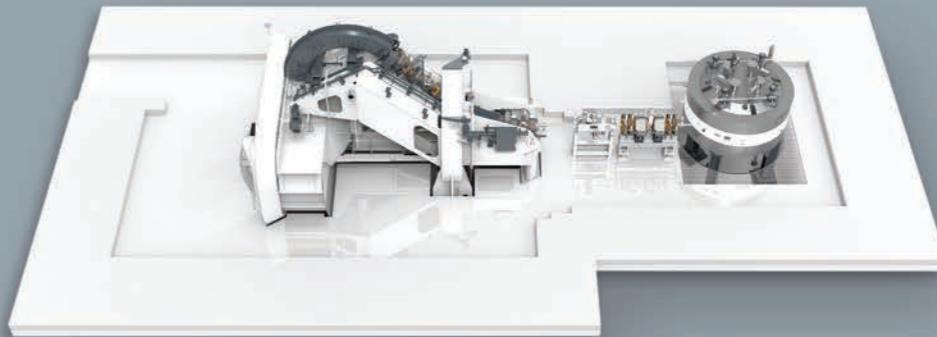
# Flexible configuration

The ProBeam 360° system offers a comprehensive and customizable proton therapy solution so you are able to tailor your single or multi-room center to meet your clinical, research, and capacity needs.

The system consists of a cyclotron, a beam transport and energy selection system, and from one to five treatment or research rooms. Treatment room options include fully-rotating gantries, fixed beam rooms, and eye treatment rooms. Research rooms are available for non-clinical proton beam applications.



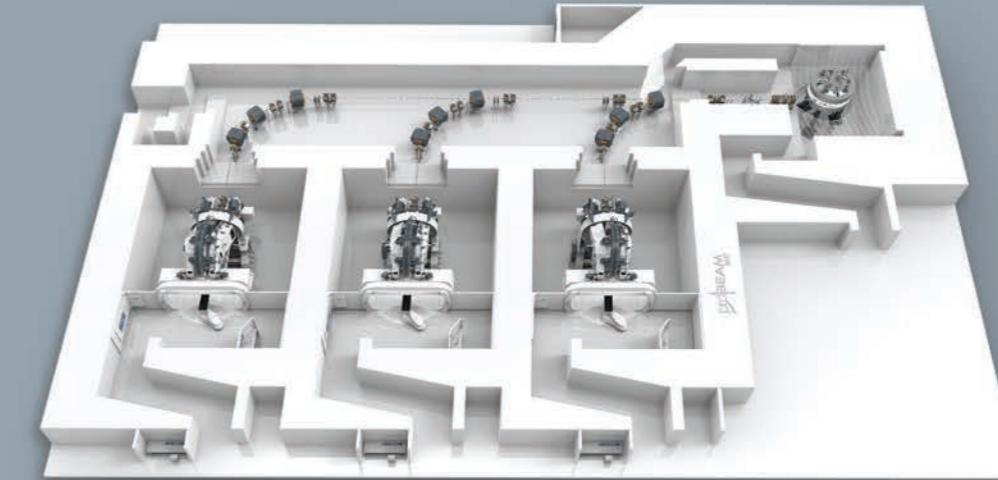
## Configuration Options:



**Single room** delivers proton therapy without compromise, making proton therapy more accessible



**Single room expandable** is ideal for centers anticipating expansion in the future



**Multi-room** offers the greatest flexibility for patient capacity, treatment modes, research, and total cost of ownership

# Clinical efficiency through an integrated system

Varian is committed to offering solutions with true end-to-end integration. Because when all components of the system and software have been developed, tested, and validated together, the resulting efficiencies can streamline operations and reduce risk.

Having access to a wide range of advanced technologies allows you to provide high quality care using a suite of products designed to work together throughout the patient's journey—from diagnosis through survivorship.

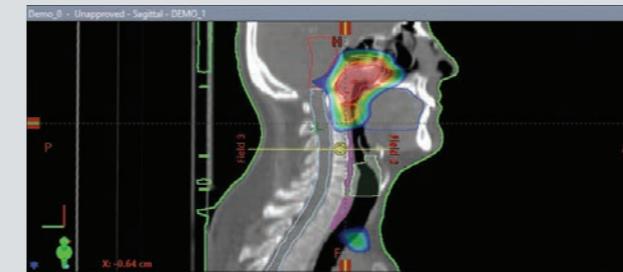


The ProBeam 360° system is integrated with:



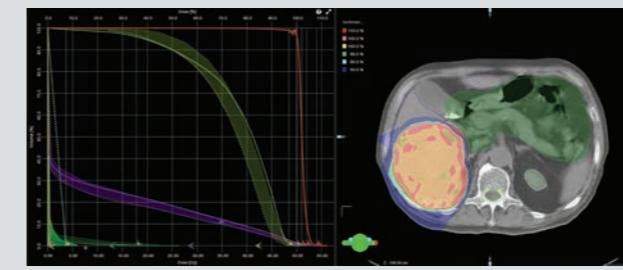
## ARIA® Oncology Information System

Allows clinics to oversee all aspects of oncology care through comprehensive information and image management software



## Eclipse™ PT Treatment Planning System

Elevates plan quality and fidelity in the presence of uncertainty with robust optimization and Monte Carlo dose calculation



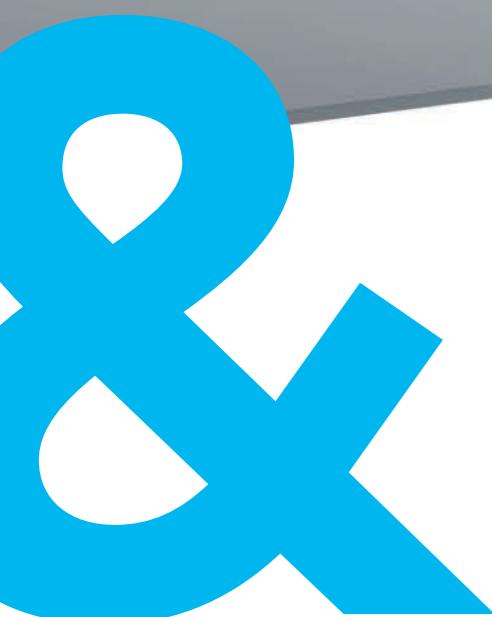
## RapidPlan™ PT Knowledge-Based Planning

Leverages knowledge and machine learning to make better plans in a fraction of the time. Decision support to help guide the right treatment for each patient



## Velocity™ Software

Seamlessly collects and integrates oncology data including medical imaging, treatment, and metadata into a comprehensive longitudinal view of the cancer patient

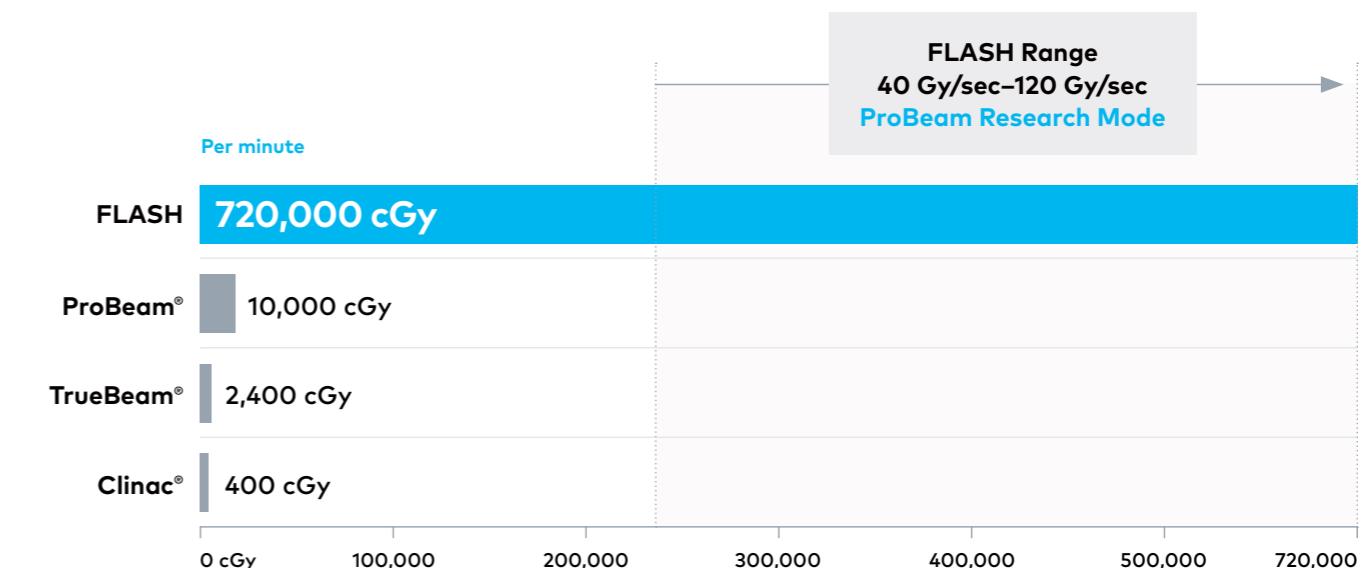
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## FLASH therapy

When you're considering investing in proton therapy, you want to be sure the technology will remain viable well into the foreseeable future.

That's why the ProBeam 360° system is designed not only for today's most complex treatments, but also to enable next-generation treatments, such as the highly anticipated FLASH therapy.\*

FLASH therapy is a non-invasive cancer treatment with the potential to revolutionize radiation therapy, delivering ultra-high doses in less than 1 second and in 1-3 treatments. With its powerful particle accelerator, 360-degree gantry, iterative CBCT, and pencil-beam scanning, the ProBeam 360° system is well-equipped for the future.



\* FLASH therapy is under preclinical research and not available for commercial sale.

# Personalized service & world-class support

We believe it's vital that you get the most out of your ProBeam 360° system. Every clinic is unique so we'll work with you to discover the solutions that match your needs.

Additionally, we've developed a wide range of programs through Varian's Professional Services organization that are designed to help you achieve higher clinical availability, more efficient workflows, safer use of technology, faster treatment times, and a more relaxed patient experience.

We offer support at every step with a full range of **Smart Solutions**, including:



## Financing

We'll collaborate with you throughout the financing process to help analyze the business opportunity, assess legal and financial structures, and identify and secure sources of funding.

## Consulting

We'll provide professional advice on how to market your practice, maximize income and minimize costs. We'll advise your team how to optimize claims submittals, overturn denials, and avoid unplanned expenses for a more profitable practice.

Plus, you'll have access to our user community where you can connect with other oncology professionals while discovering new ways to get the most out of your system.

## Education and Training

Our mission is to provide you with the skills and knowledge to operate your Varian equipment efficiently. Our global team is comprised of hundreds of experienced radiotherapy professionals, including physicists, physicians, dosimetrists, radiation therapists, and highly trained technical instructors. Clinical schools, hands-on labs, virtual classrooms, and onsite training programs will help your technical staff keep equipment and software running smoothly.

## Support and Maintenance

We will keep your system up and running at optimal levels with ProActive Services™ support. From remote diagnostics and predictive maintenance to periodic software updates and global parts management, our comprehensive care is built on Varian's proven and standardized processes so you can trust that you'll get consistently great service anywhere, anytime.

# A world without fear of cancer

There's never been a better time to invest in a solution that brings proton therapy to more patients who can benefit from this advanced treatment.

Together with you, we'll continue to drive forward—moving closer to the day we realize our vision of creating a world without fear of cancer.



# Welcome to a new era of oncology

# Intelligent Cancer Care™



## Intended Use Summary

The Varian ProBeam® 360° Proton Therapy System provides protons for precision radiotherapy of lesions, tumors, and conditions anywhere in the body where radiation treatment is indicated.

## Important Safety Information

Radiation treatments may cause side effects that can vary depending on the part of the body being treated. The most frequent ones are typically temporary and may include, but are not limited to, irritation to the respiratory, digestive, urinary or reproductive systems, fatigue, nausea, skin irritation, and hair loss. In some patients, they can be severe. Treatment sessions may vary in complexity and time. Radiation treatment is not appropriate for all cancers.

CE Mark and intl. registration pending. Not all products or features available for sale in all markets.

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