

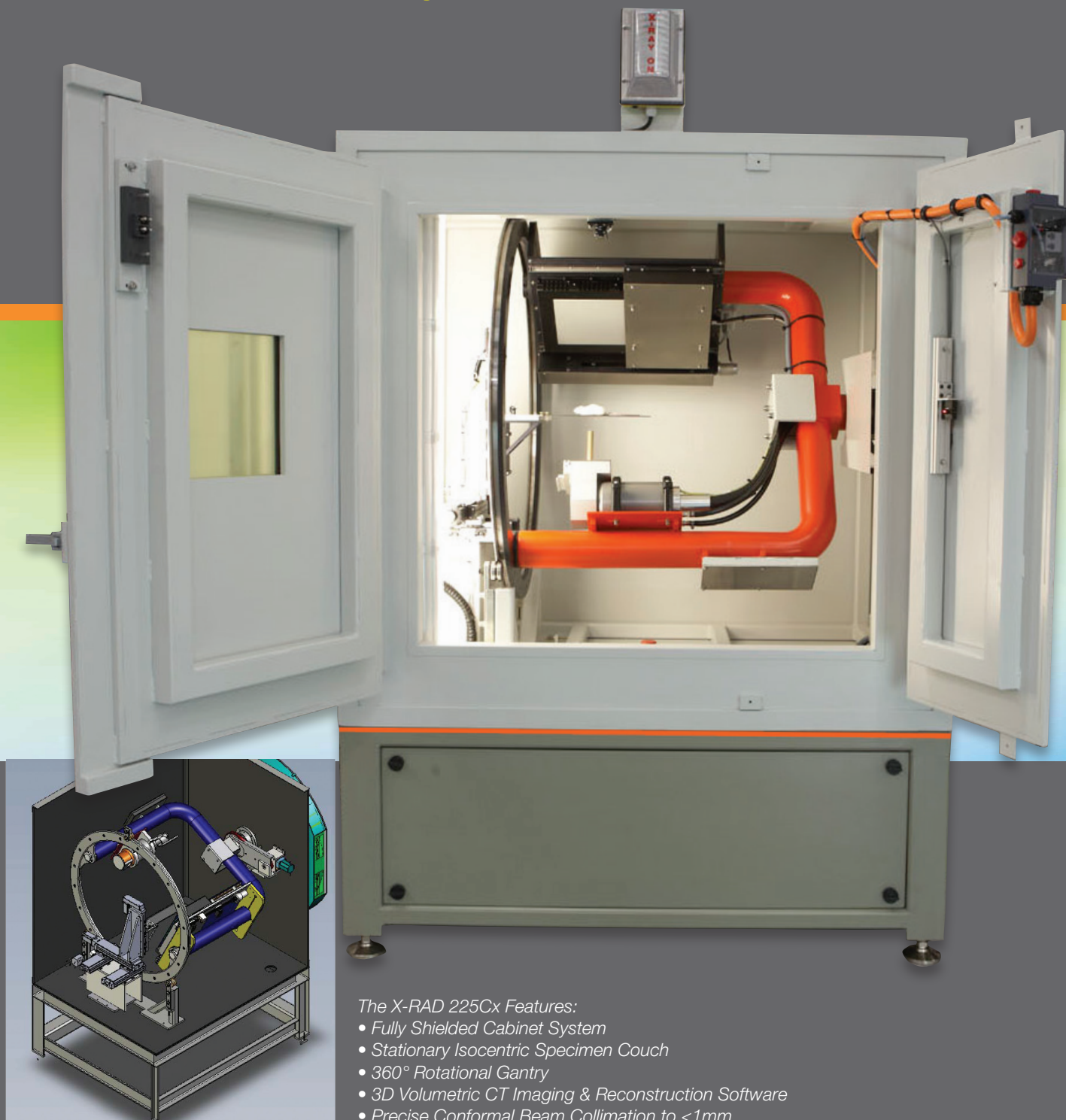
Shouldn't accurate targeting
improve response
to radiation therapy?

Precisely.



X-RAD 225Cx

Introducing a higher power X-RAD 225Cx Preclinical IGRT System



The X-RAD 225Cx Features:

- Fully Shielded Cabinet System
- Stationary Isocentric Specimen Couch
- 360° Rotational Gantry
- 3D Volumetric CT Imaging & Reconstruction Software
- Precise Conformal Beam Collimation to <1mm

Advancing our understanding of the molecular biology of cancer requires more precise tools to study the radiation induced effects used in translational research.

Precise targeting and delivery of high dose Orthovoltage X-ray therapy using 3D volumetric imaging & planning tools provides a higher level of treatment accuracy than was possible until the introduction of the X-RAD 225Cx.

The X-RAD 225Cx Small Animal IGRT research system combines a high accuracy cone beam CT imaging system and a high dose delivery X-ray source in a single platform.

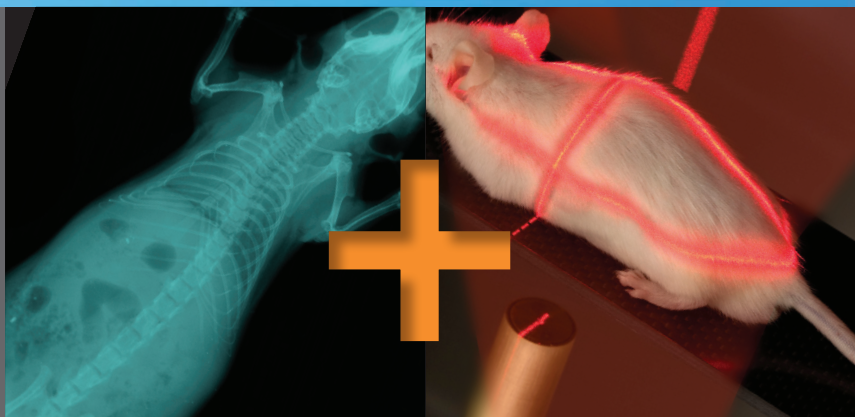
Similar to clinical systems, the isocentric design allows the specimen to remain stationary while the imaging and treatment platform rotate a full 360 degrees around the subject, thereby improving total dose delivery to the targeted area and reducing damage to non-targeted surrounding structures.

The stationary specimen platform also allows co-registration of imported data from other imaging modalities to be seamlessly fused in order to improve visibility of the affected area thereby promoting more accurate treatment planning.

Conformal collimation of the Orthovoltage X-ray beam can repeatedly target areas smaller than 1mm with exacting precision.

- 33% more output power
- 225 kVp Orthovoltage Energy
- Better dose penetration
- Faster dose delivery

Accuracy, Reliability, Repeatability.



Image, Plan, and Treat without repositioning the specimen. The X-RAD 225Cx systems are currently used at some of the most prestigious translational research institutes globally.

Technical Specifications

System Components:

X-ray Production:

X-ray Power Supply:

GE ISOVOLT 225kV, 4.5kW, Constant Potential, Continuous Duty

X-ray Tube:

Comet (640/3000 W) Focal Spot: d=0.4mm/ d=3.0mm

Thales (900/4000 W) Focal Spot: d=0.4mm/ d=3.0mm (option)

X-ray Cooling System:

Closed Loop, Water to Air Heat Exchanger, 4000 Watt Dissipation

Imaging Detector Panel:

Detector Type: aSi array using a CsI (TI) scintillator

Pixel Size: 200 micron

Image Size: 1024 x 1024

Frame Rate: 15 Hz

Motion Stages:

Rotational Gantry: 360 degrees, 0-3 RPM, 6 arc minute repeatability

X-Y-Z Animal Stage: ±10cm travel in X & Y, ±15cm in Z (vertical), 36mm/sec (adjustable), ±20 micron repeatability

Irradiation Performance:

Irradiation Energy: 10-225 kVp, 3000 Watts (4000 Watts optional)

Dose Rate: 1- >400 cGy/min (depending on X-ray settings, beam filtration and collimation)

Beam Filtration: User Interchangeable Slides, 2 HVL's provided (2.8mm Al & 0.9mm Cu), others optional

Collimation: Conformal Collimators available in sizes from 1mm to 10cm in round and non-round shapes

Beam Orientation: Static or Dynamic 0-360 degrees

Isocenter Distance: 30 cm typical

Image Guided Targeting Precision: better than 0.5mm

Imaging Performance:

Volumetric Imaging Resolution: 0.2mm (nominal)

Volumetric Field of View: 10cm x 10cm without moving specimen couch

Acquisition Time: Volume dependent, 60 seconds typical

Imaging Dose: <1 cGy/min (typical)

Application Software:

Pilot® Image acquisition and reconstruction, 3D alignment and targeting software package (licensed by PMH/UHN Toronto)

Windows® 64 Bit OS with remote diagnostics and support capability

Database Management Tools enable quick management of images, treatments, and studies by each researcher

DICOM importable and exportable image data

Control Point methodology used to quickly create sharable treatment planning techniques

Options & Accessories:

Cross platform compatible animal holding fixtures allow specimens to be transferred without repositioning.

Multi-modal Image Registration tools for optimal target identification.

Treatment Planning options are available from a larger number of sources.

X-RAD 225Cx Platforms are designed to accommodate future hardware modalities without difficulty.

Contact Precision X-ray for information on current developments and available options

Mechanical:

Weight: 6000 lbs. (2727 kg)

Assembled Dimensions: 93" H x 74" W x 52" D (236cm H x 187cm W x 132cm D)

Electrical Requirements:

1N PE 230 V 50/60Hz 35 A or 3N PE 400 / 230 V 50/60Hz 25A (TN-S or TN-C-S)

Safety:

Complies with US and European norms for radiation emission limits outside the cabinet

Complies with US FDA regulation 21 CFR 1020.40 entitled "Cabinet X-ray Systems"

