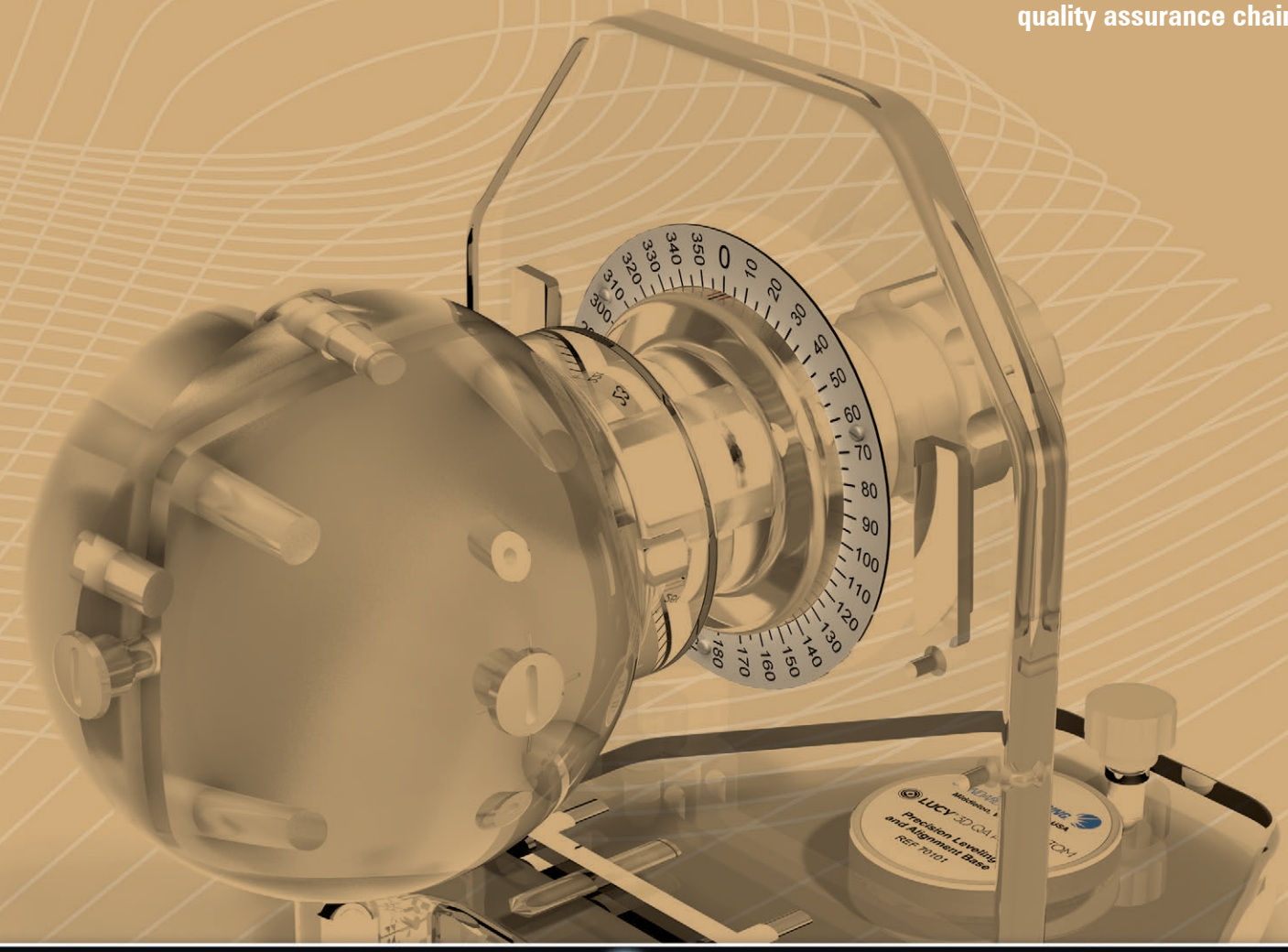
UNRIVALED, END-TO-END STEREOTACTIC QA

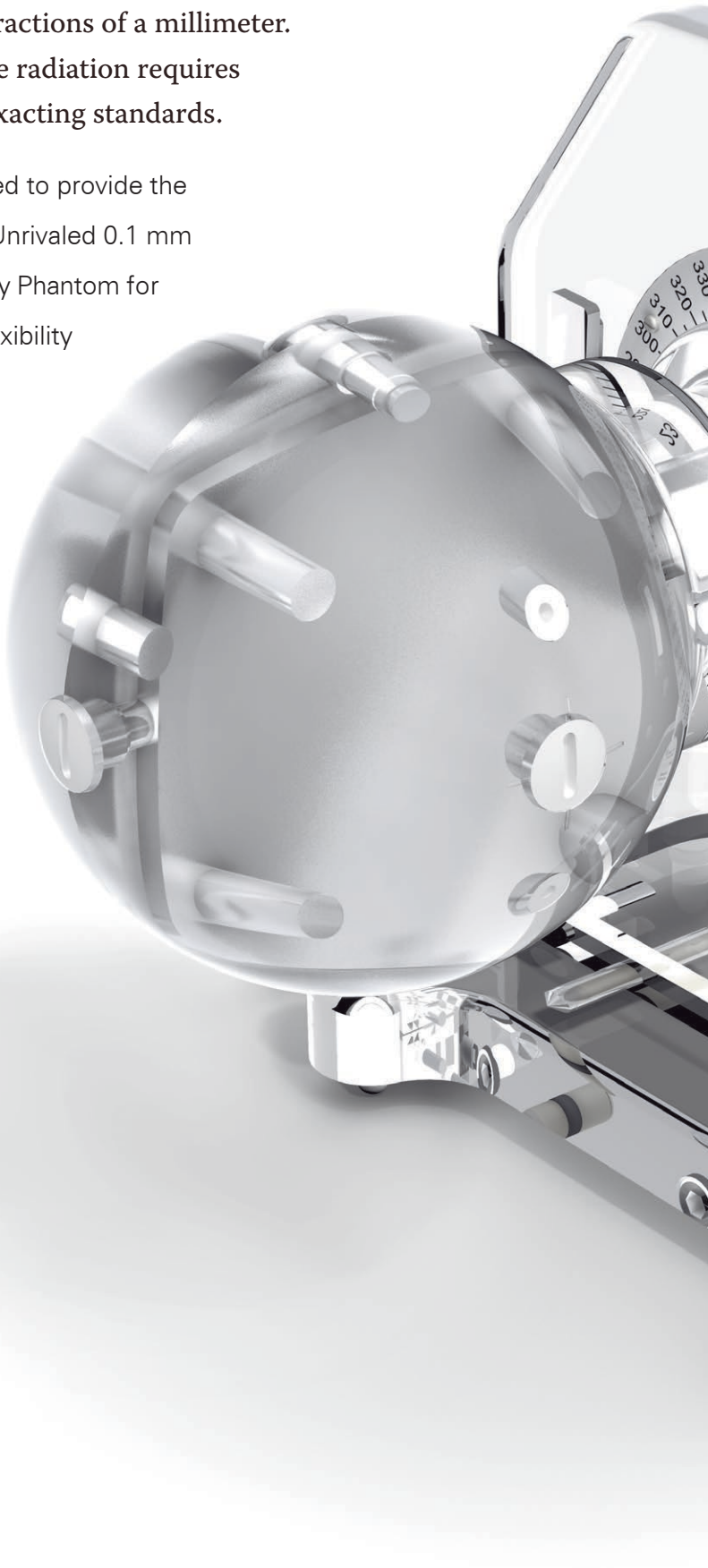
Industry-leading 0.1 mm accuracy minimizes errors at each link in the stereotactic quality assurance chain.



LUCY® 3D QA PHANTOM

Stereotactic Radiation Therapy is governed by the minute, with successful treatment often hinging on fractions of a millimeter. Delivering such precisely-targeted, high-dose radiation requires a tool specifically designed to exceed these exacting standards.

Every facet of the Lucy 3D QA Phantom is tailored to provide the superior accuracy required for stereotactic QA. Unrivaled 0.1 mm accuracy and specialized inserts optimize the Lucy Phantom for each link of the QA chain. This precision and flexibility combine to make the Lucy Phantom ideal for any stereotactic treatment facility.



"Combined with the A16 chamber, the Lucy Phantom is an exceptional QA device. It is so easy to use with ExacTrac that we use it to perform patient specific QA for every SRS patient treated on our Novalis TX."

Jeff Campbell, MS
Medical Physicist
Integris Southwest Medical Center

Validate the **Complete Stereotactic QA** Chain

Confident Image Fusion

Verify the accuracy of the entire image fusion process. Point and volume CT/MRI inserts allow for consistent setup and acquisition. Fused images can be compared to measurements in the Lucy specifications to ensure sub-millimeter precision.

Minimize Transfer Errors

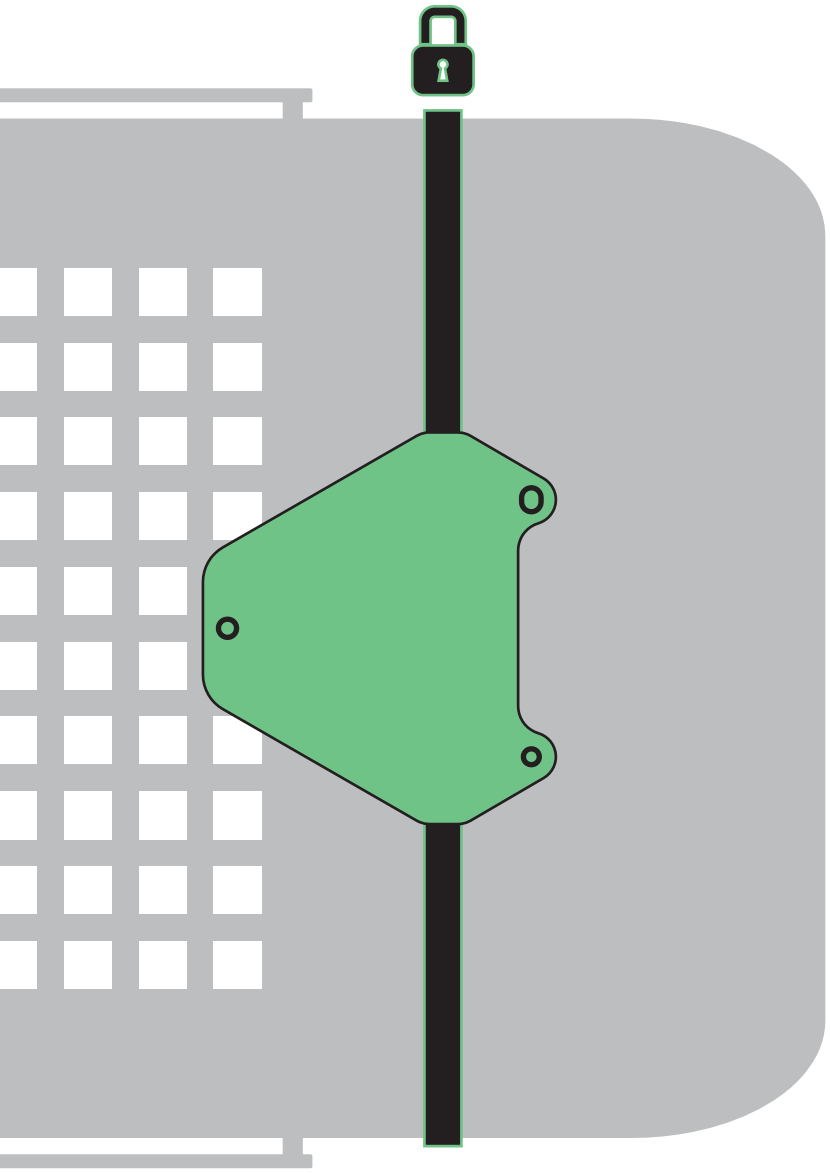
Industry-leading manufacturing tolerances provide incomparable accuracy when contrasting distance measurements to images in treatment planning software. Since distance measurements should be evaluated at each step of the imaging process, these rigid tolerances can drastically reduce cumulative uncertainty.

Simplify Patient Dosimetry

The Lucy dosimetry inserts help quickly obtain absolute, relative and point-dose dosimetry measurements at isocenter and at exact positions off isocenter. This allows for a seamless evaluation of dosimetric accuracy.

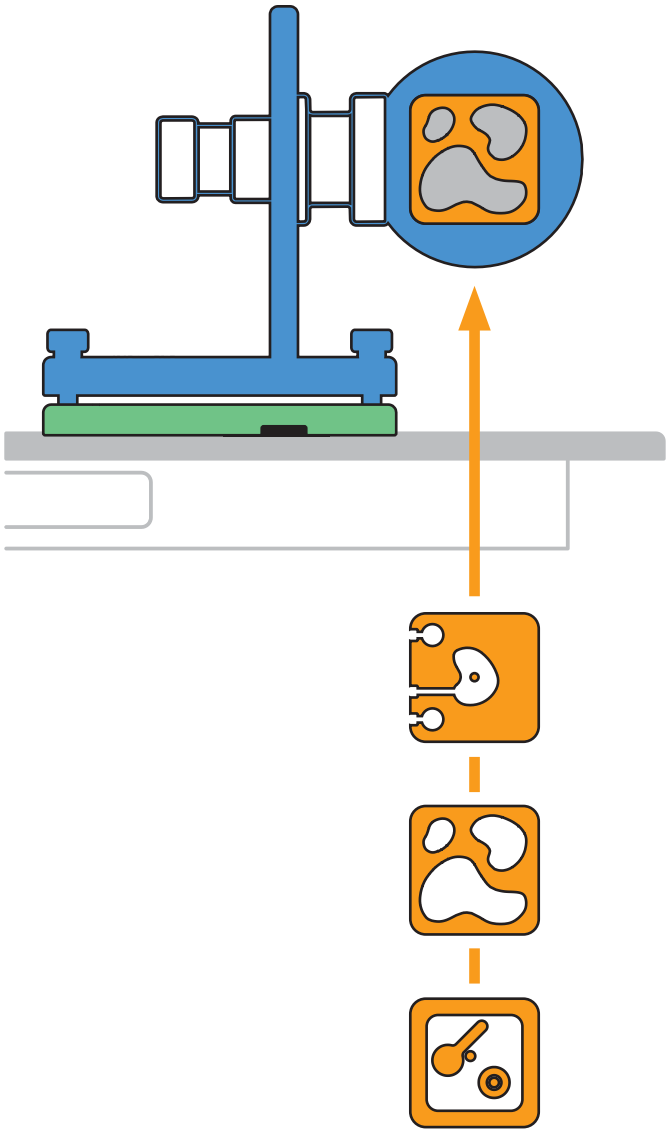
Lock

Use the Lucy Lock Plate for Repeatable Positioning Even While Changing Inserts



Target

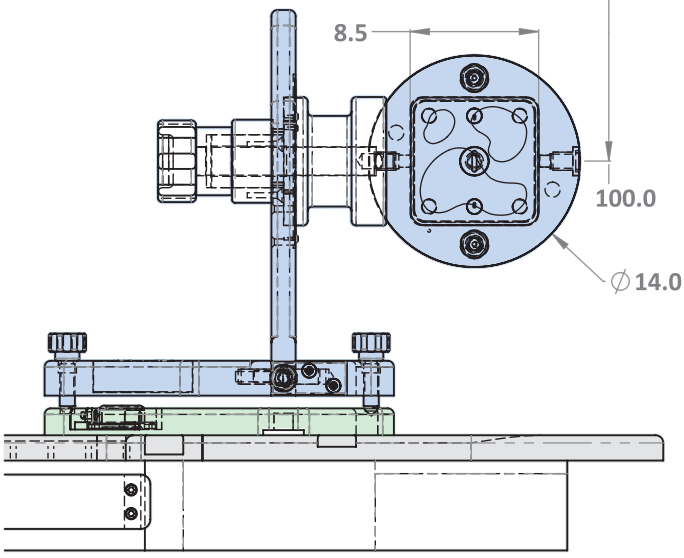
A Variety of Targeting Inserts Are Available for Testing Accuracy



Locks into exact SRS coordinate system

Deliver

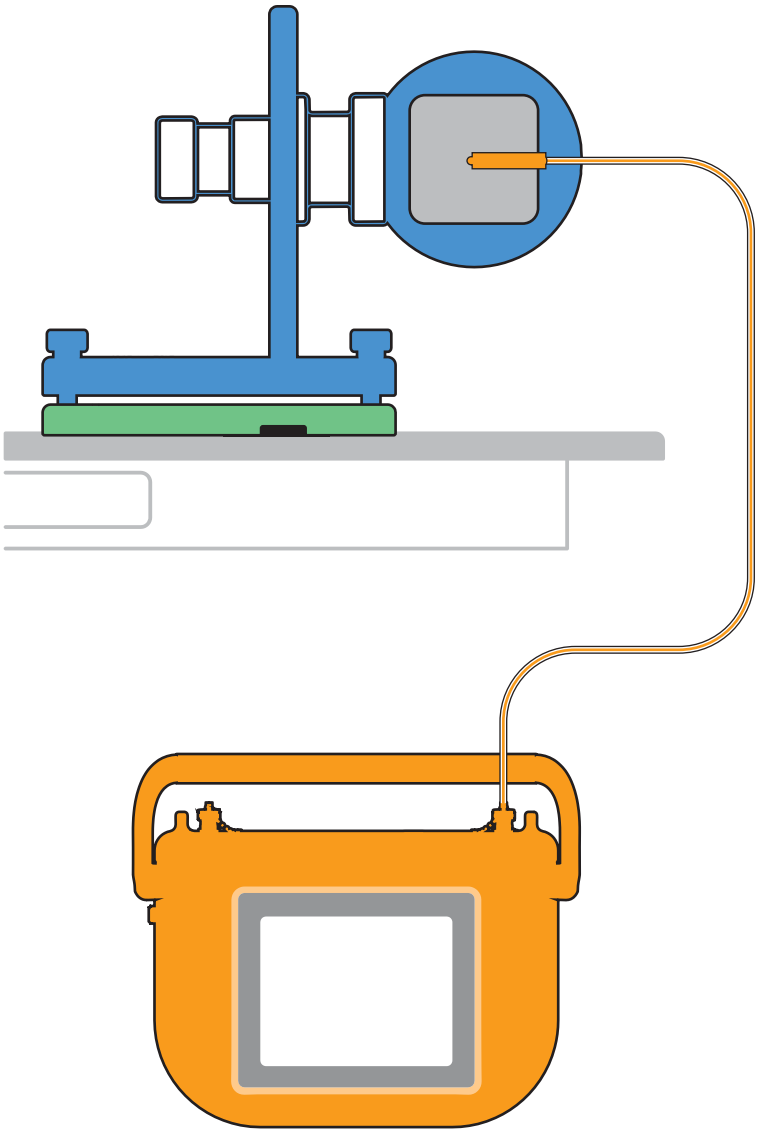
Create and Deliver a Plan Based on Known Geometry



Measure Cumulative Errors and Systemic Uncertainties from End to End in the Stereotactic QA Chain

Verify

Ion Chambers or Film, Can Confirm Prescribed Dose and Software Can Help with Automatic Analysis of TG-142 Recommended Tests



Comprehensive QA Packages

Complete Solutions for Dosimetry, CT and MRI QA

Dosimetry QA Accessory Package

Dosimetry Insert for Ion Chambers and Detectors

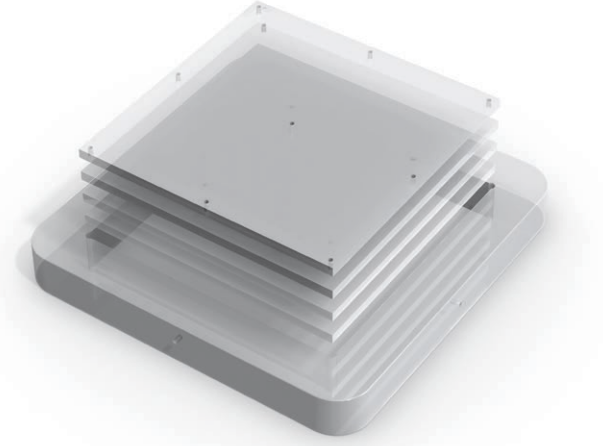
This insert positions the centroid of the ion chamber's active volume at the geometric center of the Lucy Phantom to easily measure absolute dose.

Target/Treatment Verification Film Cassette

This black acrylic cassette accommodates radiochromic or conventional therapy film. It positions one 3 in x 3 in film at the exact center of the Lucy Phantom. Sharp markers in this cassette produce four impressions, forming a square on the film equidistant from the center for isocentricity and distance measurement tests. A fifth marker is used to identify orientation.

Dosimetry Film Cassette for Three 2.5 in x 2.5 in Films

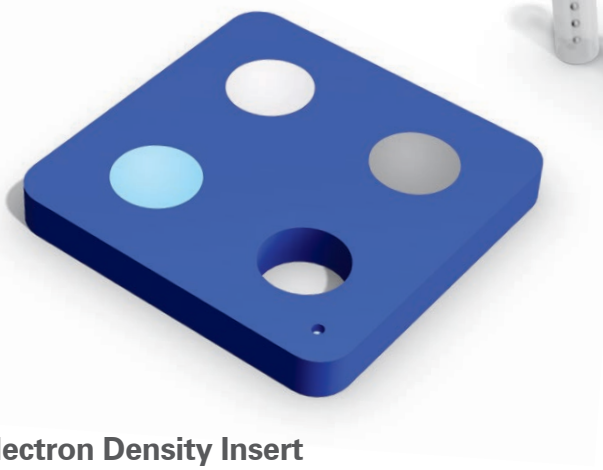
This clear acrylic cassette positions three films at the exact center of the Lucy 3D QA Phantom for film dosimetry measurements. The two films on either side of the central film are separated by 2.25 mm acrylic spacers.



CT Imaging QA Accessory Package

CT Volume Insert with Three Known Geometries

This insert has three irregularly shaped air volumes of 250 mm^3, 750 mm^3 and 1750 mm^3. The volume insert evaluates the ability of the TPS to accurately recreate images as they are moved from one imaging system to another.

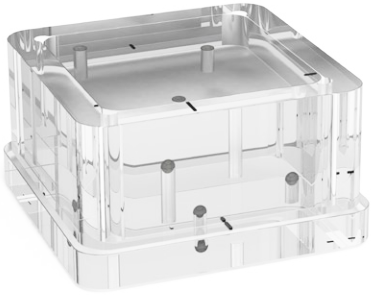


Electron Density Insert

This insert provides a quick and convenient check of the CT density tables used by the imaging and treatment planning systems. The insert is comprised of: Blue Water, air, trabecular bone, cortical bone and adipose.

CT Marker Cylinders, set of Four

Each marker cylinder contains five 2 mm diameter aluminum spheres which are spaced 5 mm center to center or 3 mm apart. The targets within the four marker cylinders create a square 60 mm on each side. When used in conjunction with the MRI Marker Cylinders, these inserts evaluate the fusion function of treatment planning programs.



Multiple Metastasis Insert

Commission and QA the the single-isocenter multiple metastasis treatment process. Image the phantom and then verify dose with film.

CT Grid Insert for Spatial Distortion

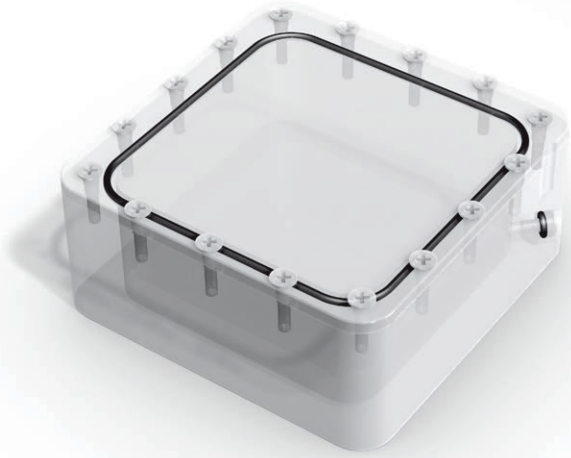
This two dimensional metallic grid is designed to check image distortion and symmetry. Grid lines are visible at conventional settings for CT scanners. The grid wires are 0.5 mm aluminum, spaced 5 mm apart and originate at the center of the insert.

Evaluate the accuracy of image fusion

MRI Imaging QA Accessory Package

MRI Volume Insert with Three Known Geometries

This insert has three irregularly shaped volumes filled with mineral oil; used to analyze image integrity when moved from one imaging system to another.

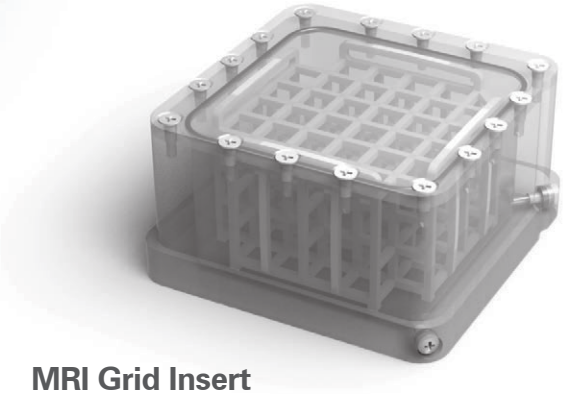


MRI Marker Cylinders, set of Four

These cylinders contain five, 2 mm diameter spheres, spaced 5 mm center to center or 3 mm apart. The targets within the cylinders create a square 60 mm on each side. When used in conjunction with the CT Marker Cylinders, these markers evaluate the fusion function of treatment planning programs.

MRI Signal Generator

The signal generator contains a manganese chloride solution that produces enough MRI signal strength to easily image the MRI Marker Cylinders.



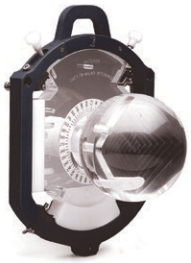
MRI Grid Insert

Used to check image distortion and symmetry, the insert consists of a manganese chloride solution and a three-dimensional 1 cm x 1 cm plastic grid. Each plane of the insert is unique and identifiable. The MRI marker cylinders can also be used in conjunction with the MRI spatial distortion insert.

Easy Setup with Framed and Frameless Systems

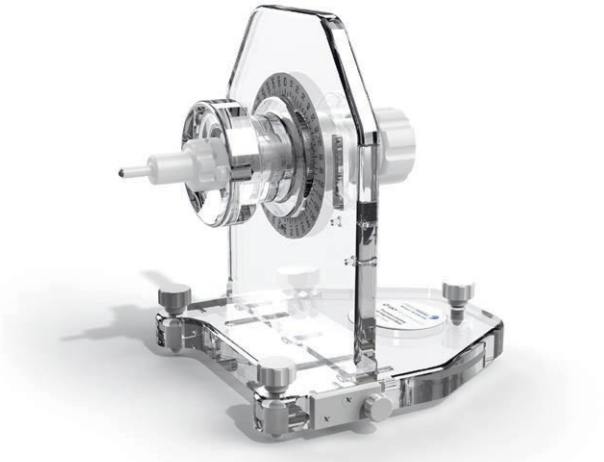
The Lucy 3D QA Phantom interfaces with most SRS frames and frameless systems for reduced setup and scanning time in CT and angiographic imaging.

- Mount the SRS frame (with Lucy) on the couch and treat within the manufacturer's exact coordinate system.
- Simulate patient positioning for frameless cranial or body SRS with the Precision Leveling and Rotational Alignment Base.
- Rotate the Lucy 360° for operation in coronal, sagittal or transverse plane.



BrainLAB

BrainLAB Frameless



Elekta Fraxion™ / EXTEND™

Radiation Alignment Pointer

The Radiation Alignment Pointer attaches to the Precision Leveling and Rotational Alignment Base for secure positioning. The 5mm tungsten sphere tip is used for radiation, laser and optical alignment. It can be locked into a Lucy frame for easy setup and verification at isocenter with film or EPID.

Leksell Gamma Knife®

Winston-Lutz Test for Radiation Isocenter

The tungsten sphere tip of the Radiation Alignment Pointer can be imaged for the Winston-Lutz test. The sphere is placed at the mechanical isocenter of the treatment room as determined by the room lasers. The accelerator is then rotated to each required gantry angle, and the sphere is imaged with film or an EPID.

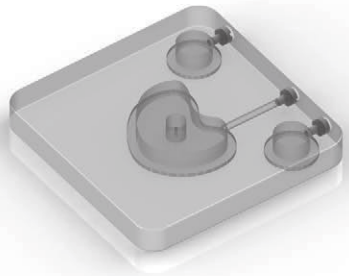
The Stereotactic Module of PIPSpro Software automates Winston-Lutz analysis and provides 3D offset measurements.

Varian / CRW/BRW

Additional Accessories

CT/MRI Isocentric Volume Insert

This insert has an isocentrically-placed target of known volume for integrated testing of CT and MR imaging, image fusion and treatment planning and a center marker sphere for isocenter-alignment.



3D Volumetric Target Dosimetry Kit

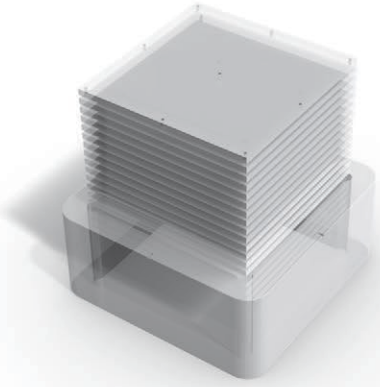
The Multiple Target Shapes Insert offers complex geometries targets of known dimensions and volumes to challenge and assess the reconstruction capabilities of the treatment planning system. Evaluate the ability of your TPS to include and avoid critical structures and then utilize the included film cassette to verify dose delivery to the target.

IGRT kV and X-Ray Angiography Marker Cylinders

The IGRT kV and X-Ray Angiography Marker Cylinders are used with the CT Marker Cylinders and the MRI Marker Cylinders to evaluate the fusion function of treatment planning programs.

Dosimetry Cassette for Thirteen 2.5 x 2.5 inch films

These cassettes position film in the large void in one hemisphere of the Lucy 3D QA Phantom for film dosimetry measurements. The cassette and spaces are made of clear acrylic.

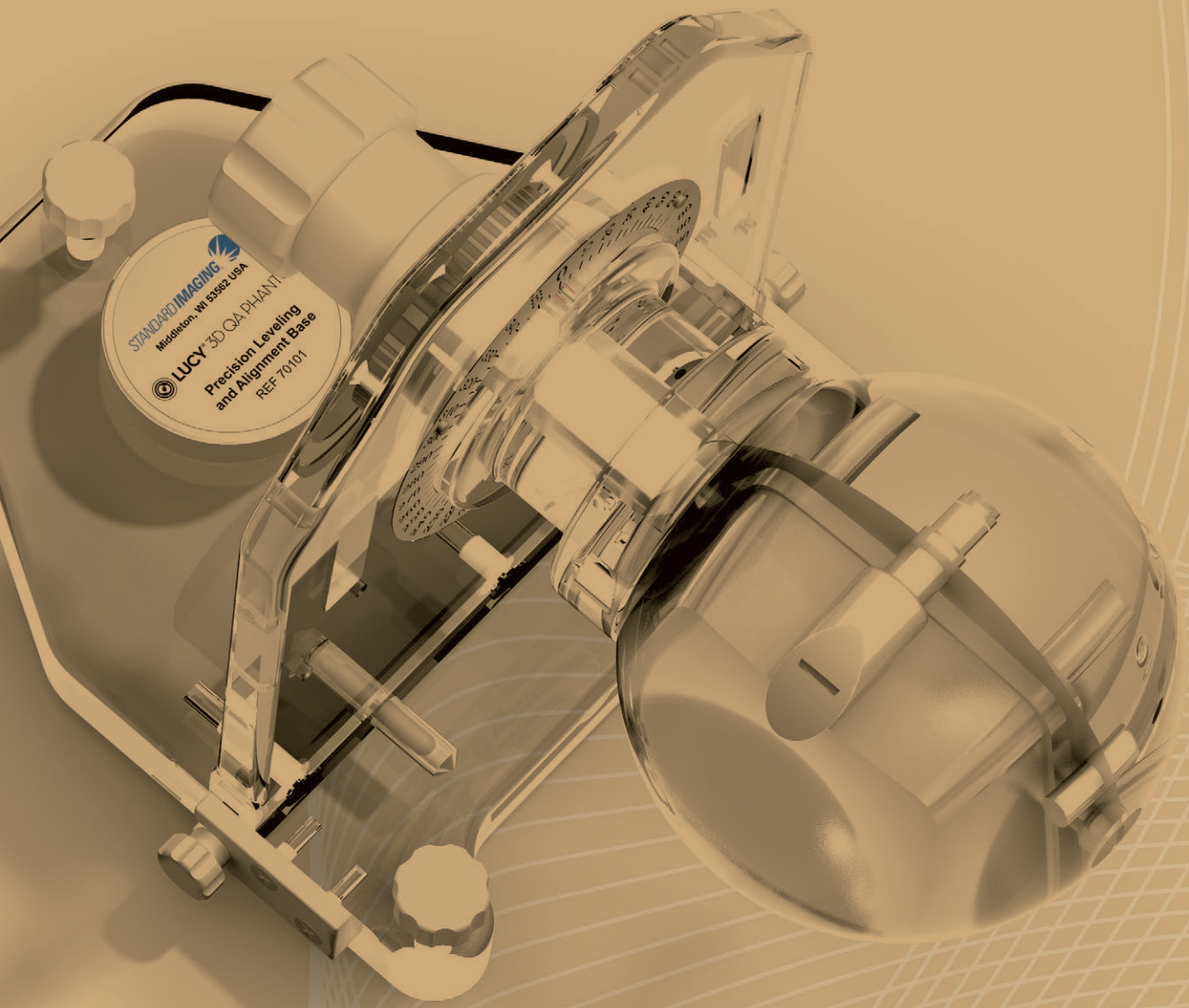


Universal Couch Lock

The Universal Couch Lock ensures accurate positioning of the Lucy Phantom and Precision base on the couch. The Couch Lock is compatible with a standard two-pin CIVCO Lock-Bar.

LUCY 3D QA PHANTOM (REF 91210) SPECIFICATIONS

LUCY 3D QA PHANTOM	Acrylic Sphere 140 mm (5.51 in) diameter
Blank Filler Plug (HEMI-C)	81 x 81 x 35 mm (3.19 x 3.19 x 1.38 in)
Blank Filler Plug (HEMI-A)	85 x 85 x 10 mm (3.35 x 3.35 x .39 in)
Accessory Port for Ionization Chambers	8 mm (.31 in) diameter
PRECISION LEVELING AND ROTATIONAL ALIGNMENT BASE	
Height	30 cm (11.81 in)
Depth	23 cm (9.06 in)
Width	20 cm (7.87 in)
Weight	3.4 kg (7.5 lbs)
DOSIMETRY QA ACCESSORIES	
Dosimetry Insert for Ion Chamber	85 x 85 x 10 mm (3.35 x 3.35 x .39 in)
Dosimetry Film Cassette for Three 2.5" x 2.5" films	85 x 85 x 10 mm (3.35 x 3.35 x .39 in)
Target/Treatment Verification - Film Cassette - Four Titanium Fiducial Markers - One Titanium Fiducial Marker for Orientation	85 x 85 x 10 mm (3.35 x 3.35 x .39 in) 60 mm (2.36 in) square pattern
Dosimetry Film Cassette for Three 3.0" x 3.0" films	85 x 85 x 10 mm (3.35 x 3.35 x .39 in)
Dosimetry Film Cassette for Thirteen 2.5" x 2.5" films	85 x 85 x 35 mm (3.35 x 3.35 x 1.38 in)
CT QA ACCESSORIES	
CT Marker Cylinders, set of four - Five 2.0 mm Aluminum Spheres per cylinder	10 mm (.39 in) length, 25 mm (.98 in) diameter 5 mm (.197 in) center-to-center
CT Volume Insert with 3 irregular known volumes - Geometry One - Geometry Two - Geometry Three	85 x 85 x 10 mm (3.35 x 3.35 x .39 in) Area 250 mm, Volume 2500 mm^3 Area 750 mm, Volume 7500 mm^3 Area 1750 mm, Volume 17500 mm^3
CT Grid Insert for spatial distortion	85 x 85 x 10 mm (3.35 x 3.35 x .39 in) 0.5 mm (.02 in) aluminum wire spaced 5 mm (.197 in) apart
Multiple Metastasis Insert	63 x 63 x 20 mm (2.5 x 2.5 x .78 in)
MRI QA ACCESSORIES	
MRI Marker Cylinders, set of four - Five 2.0 mm mineral oil spheres per cylinder	10 mm (.39 in) length, 25 mm (.98 in) diameter 5 mm (.197 in) center-to-center
MRI Volume Insert with three known Geometries - Geometry One - Geometry Two - Geometry Three	85 x 85 x 10 mm (3.35 x 3.35 x .39 in) Area 250 mm, Volume 1700 mm^3 Area 750 mm, Volume 5250 mm^3 Area 1750 mm, Volume 12250 mm^3
MRI Signal Generator - Cavity Filled with Manganese Chloride	85 x 85 x 35 mm (3.35 x 3.35 x 1.38 in)
MRI Grid Insert	85 x 85 x 35 mm (3.35 x 3.35 x 1.38 in)
IMAGING QA ACCESSORIES	
IGRT Localization & Angiography Marker Cylinders, set of four - One 2.0 mm Lead Sphere in each cylinder	10 mm (.39 in) length, 25 mm (.98 in) diameter
RADIATION ALIGNMENT POINTER	
Includes 5 mm Radiation Alignment Tip	
MOSFET DOSIMETRY CASSETTE	
Cassette with 15 cavities 2.5 x 8 x 1 mm to accommodate MOSFET Diodes	85 x 85 x 10 mm (3.35 x 3.35 x .39 in)
TLD DOSIMETRY CASSETTE	
Cassette with 49 cavities 3.4 x 3.4 x 1 mm to accommodate TLDs	85 x 85 x 10 mm (3.35 x 3.35 x .39 in)
Cassette with 85 cavities 1.5 x 1.5 x 1 mm to accommodate TLDs	85 x 85 x 10 mm (3.35 x 3.35 x .39 in)



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