

Model 76-432 CT Spiral Phantom

The Model 76-432 CT Spiral Phantom is specifically designed to confirm the index and performance parameters of conventional (axial) and spiral (helical) CT scanners.

The accurate indexing capability and exceptional image quality of computed tomography (CT) scanners not only guarantee the object's location, size and shape, but also improve the diagnosis accuracy. The index and performance parameters of CT scanners cannot be confirmed without objects of known specifications. The Model 76-432 CT Spiral Phantom provides specific details necessary to confirm the integrity of both conventional and spiral scanning. What makes the phantom unique is that it allows the user to visually evaluate all test results in their image displays.

The phantom consists of five acrylic plates of different sizes, all affixed to a flat rectangular base. Specific hole patterns are drilled on each side of these plates. When imaging, the holes within the x-ray field will appear in the phantom images. By the appearance of the holes, both index and performance parameters can be confirmed qualitatively and quantitatively.

The CT Spiral Phantom is designed to be used by: CT Manufacturers, Research Laboratories, Regulatory Agencies, and End Users.

Designed by Jung T. Ho, Ph.D., Dept. of Radiology, LAC+USC Medical Center. Los Angeles, CA

With the CT Spiral Phantom, the end user can:

- ▶ Set up baseline standards for future reference
- ▶ Verify scanner performance in the acceptance testing
- ▶ Assist in routine equipment quality control testing
- ▶ Evaluate vendor-supported imaging protocols
- ▶ Customize image parameters for special applications



Specifications

Index parameters:

- Light localizer orientation
- Light localizer and image slice congruence
- Slice thickness accuracy
- Gantry inclination
- Couch index accuracy
- Ruler (angle and distance) accuracy

Performance parameters:

- Slice geometric uniformity
- Image geometric distortion
- Image slice overlap
- Slice thickness change by pitch factor and image interpolation
- Noise level of imaging protocols

PHYSICAL

- Material: acrylic (PMMA)
- Plate dimensions: 10 x 10 cm, 15 x 15 cm, 20 x 20 cm, 25 x 25 cm
- Phantom dimensions: .. 20 cm long, 25 cm wide, 25 cm high
- Weight: 8.2 kg (18 lbs)

With the CT Spiral Phantom:

- ▶ Quality of axial & spiral scanning can be assured
- ▶ Accuracy of clinical diagnosis based on the object's size, shape and location will be improved
- ▶ Users can evaluate scanners objectively and independently of CT manufacturers
- ▶ No film exposures and no radiation profile measurements are necessary
- ▶ All test results can be evaluated visually by the users in their image displays
- ▶ Scanner evaluation is more realistic; what you scan is what you see