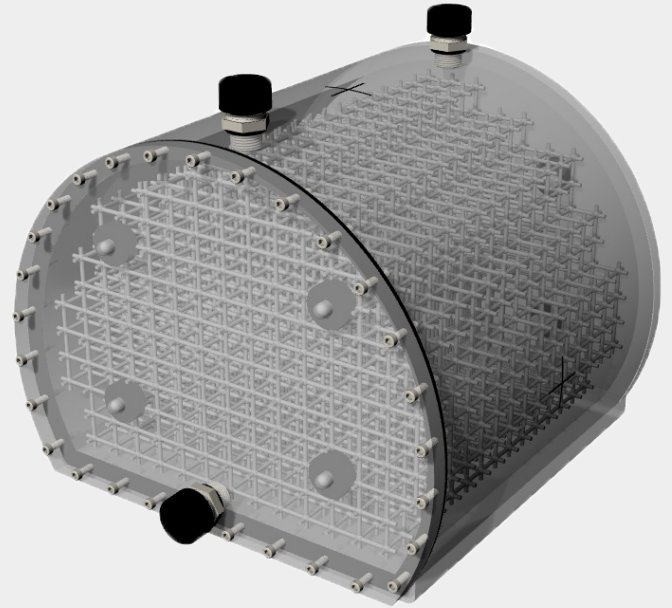


Large Field MR Distortion Phantom

- Assess image distortion due to: B_0 field inhomogeneities, gradient nonlinearity, chemical shifts, and susceptibility artifacts
- Submillimeter control point detection
- Optimized 3D grid spacing
- Easy integration and laser alignment
- Compatible with Distortion Check Software



Assess Image Distortion in a Tissue-Like Medium

The Large Field MR Distortion Phantom provides a tissue-like imaging environment for assessing geometric distortion in whole-body MRI scanners. The phantom enables assessment of image distortion caused by B_0 inhomogeneity and nonlinearity of the magnetic gradients.

Unlike air-filled phantoms, the Large Field MR Distortion Phantom is liquid-filled, making it sensitive to chemical shifts and susceptibility artifacts, which can be additional causes of distortion found when encountering density differences in diagnostic MRI and radiation therapy treatment planning.

Unique, Complete and Easy to Use

The phantom features a unique orthogonal 3D grid that provides complete geometric data throughout the imaging volume. Users can fill the phantom with the AAPM TG 100 recommended solution, or with specialized solutions for high-field MRI or unique scan sequences. Ground-truth measurements of grid locations can be obtained through CT scanning of the phantom.

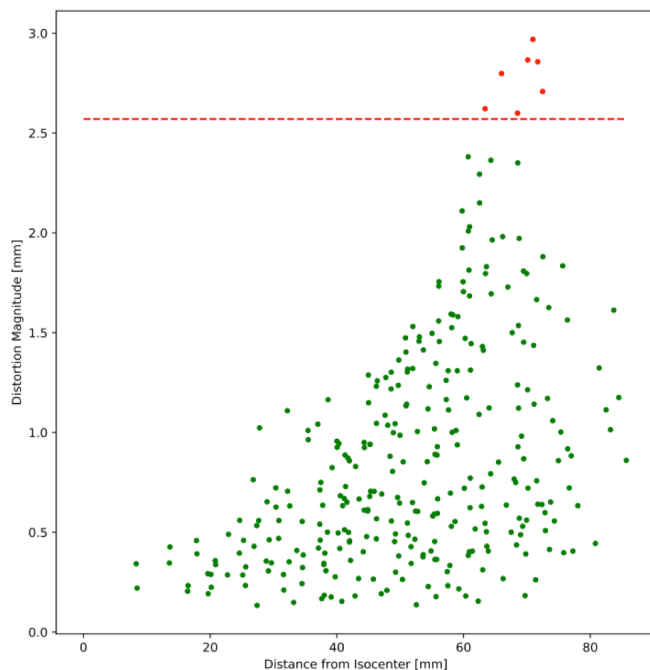
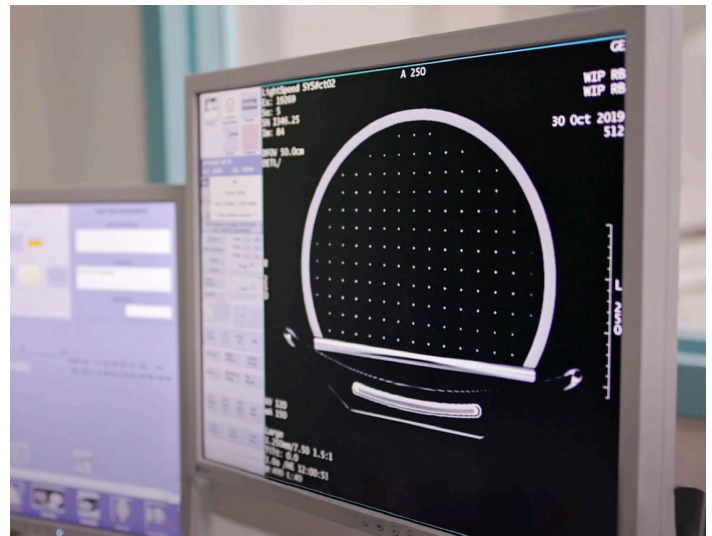
The phantom is marked for ease of alignment to position lasers and is designed for use with both curved and flat gantry tables.

Automated Analysis of Distortion in MRgRT

Used with MRI Grid phantoms, Distortion Check software quickly and automatically quantifies distortion in MRI images. Simply scan the phantom, upload images, review reports and trend analysis, and export DICOM overlays.

The software registers either a ground truth CAD or CT scan to the detected control points. An interpolation is then performed to generate the 3D distortion vector fields.

Results can be reported in a variety of output formats including scatter plots, contour plots, box and whisker plots for trending, and DICOM overlays that can be exported to third party software.

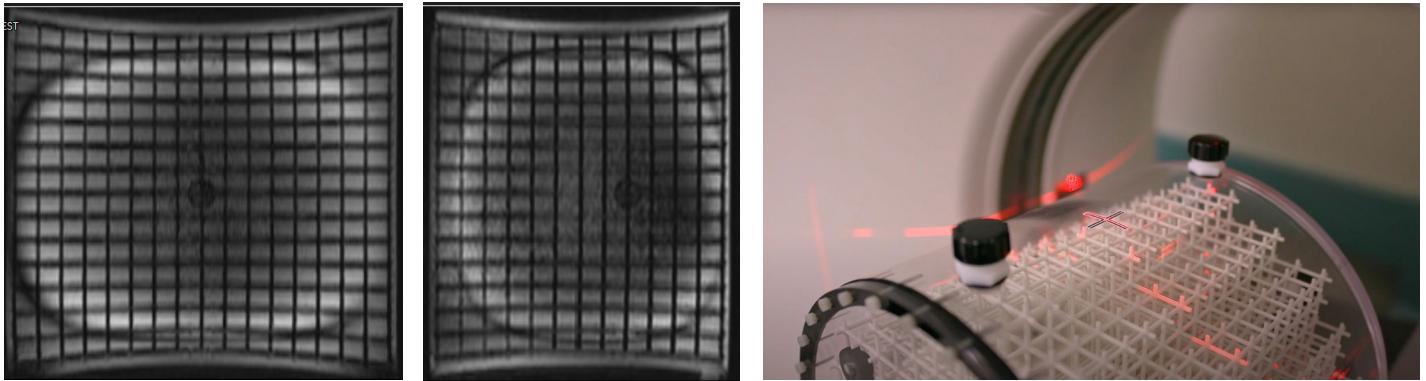


Features

- Quickly and automatically analyze complete MR data sets
- Density of control points optimized to bring interpolation close to linearity
- User-friendly cloud-based solution
- Detailed format in NEMA MS 12 standard recommendations
- Easily analyze and track multiple machines, imaging sequences and phantoms
- Establish distortion tolerance thresholds specific to different imaging sequences

Phantom In Use

The Large Field MR Distortion Phantom has been successfully tested in multiple sequences including T1-weighted, T2-weighted, 3D Time-of-Flight, MPRAGE and CISS.



T1-weighted MRI images

Specifications

Dimensions	30 cm (L) x 27.6 cm (H) x 30 cm (DIA)
Weight (Dry)	17 lbs (7.7 kg)
Weight (Filled)	62 lbs (28.1 kg)
Materials	PMMA
Grid Spacing	20.3 mm (I-S), 20.5 mm (AP) and 21.5 mm (L-R). Grid intersections enhanced by 6 mm diameter sphere.

Items Included with the Large Field MR Distortion Phantom (Model 604-GS)

Quantity	Description
1	Large Field MR Image Distortion Phantom
2	User Guides
1	Filling Funnel
10	Extra Plastic Screws
1	Harness
1	Plastic Tray
1	Carry Case
-	Unlimited scans using MRI Distortion Check Software for 2 year period