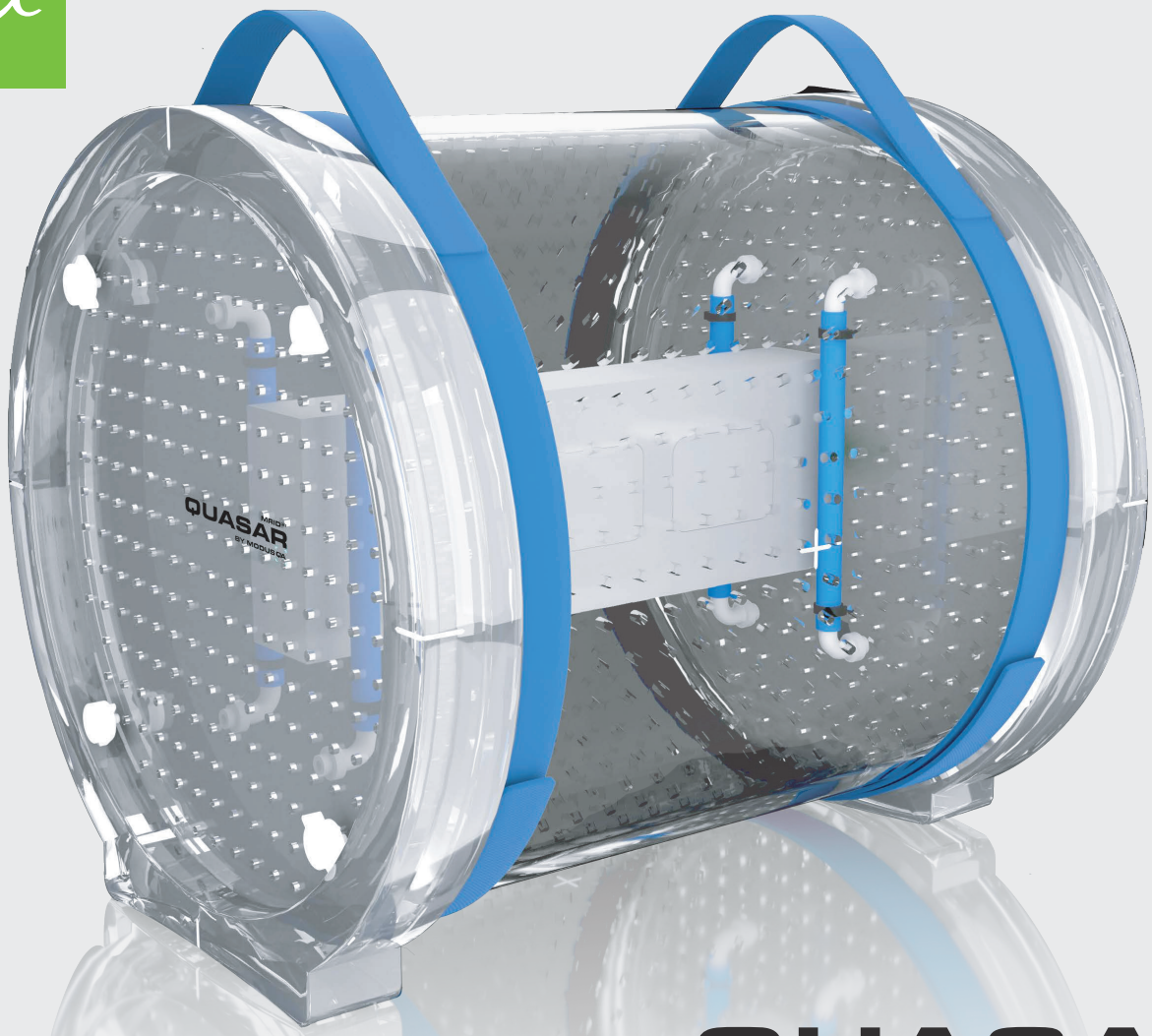
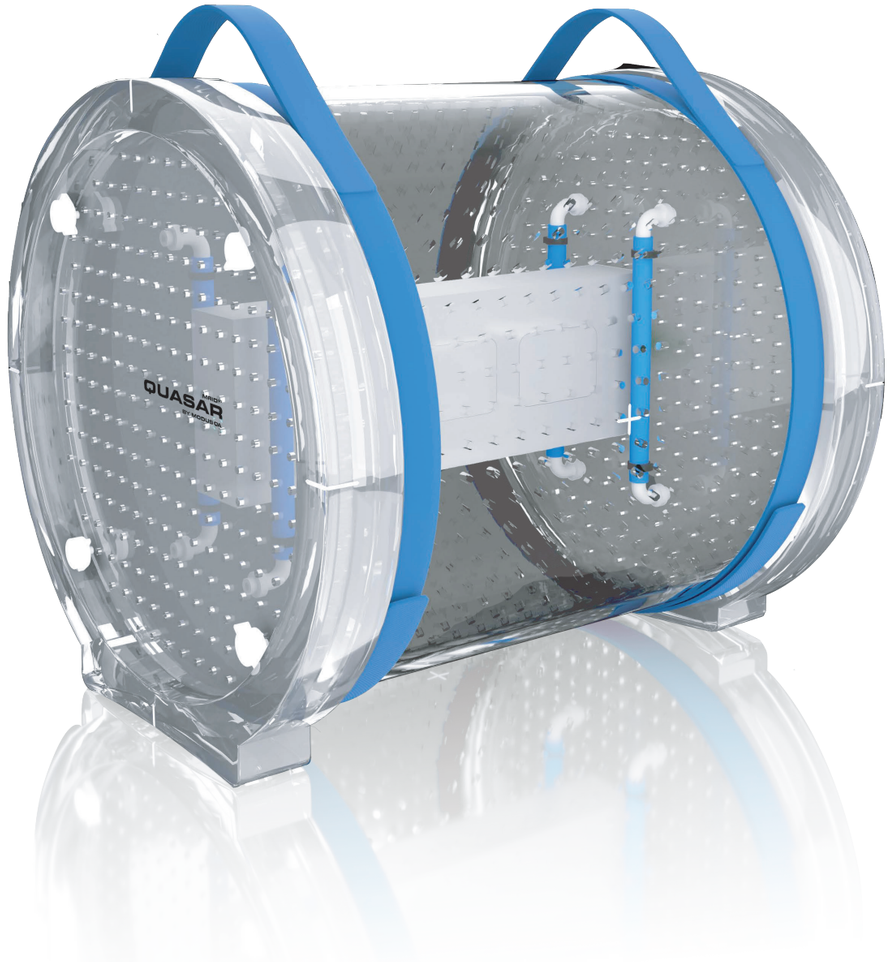


QUASAR

MRID^{3D} Geometric Distortion Analysis Phantom

The best way to quantify MRI geometric distortion in 3D

QUASAR® MRID^{3D}



QUASAR MRID^{3D} Geometric Distortion Analysis Phantom
is a lighter, larger and more efficient measurement technique that leverages harmonic analysis to quantify MRI geometric distortion in 3D.

WORKFLOW EFFICIENCY
Quickly setup, scan and quantify geometric distortion measurements in as little as 10 minutes with a lighter, larger and faster analysis system.

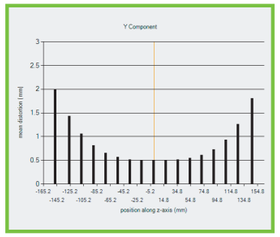
GEOMETRIC ACCURACY
Large FOV phantom design follows recommendations from NEMA/ MITA MS-12 and IEC 62464-1 for highest accuracy even when distortion is high and vendor correction is off.

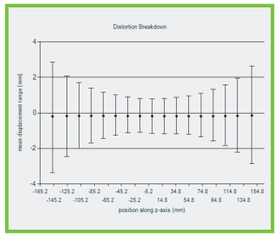
DIMENSIONAL STABILITY
Integrated expansion tubes (patent pending) compensate for changes in liquid volume, caused by changes in temperature and pressure, ensuring the phantom is dimensionally stable.

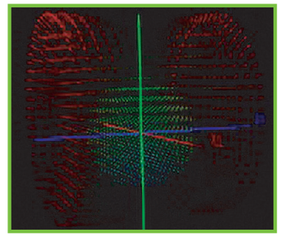
HARMONIC ANALYSIS
Adapts analytical techniques that are routinely used in MRI B0 shimming and gradient coil design.

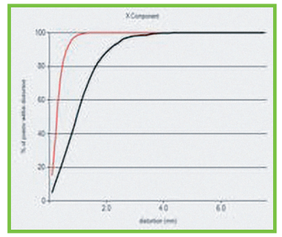
Harmonic analysis is a well-established mathematical tool used to solve electromagnetism problems with well-defined boundary conditions including MRI gradient coil design and B0 shimming.

The QUASAR MRID^{3D} Geometric Distortion Analysis System measures distortions on the closed surface of a boundary phantom and uses harmonic analysis to determine distortions throughout the imaging volume. This enables a lightweight 21 kg hollow phantom (39.4 cm × 39.1 cm), roughly half the weight of a comparable water-filled grid phantom. Recessed handles, three-point contact feet, and engraved landmarks support safe single-person setup. Susceptibility-matched mineral oil fiducials provide fast, high-contrast 3D T1-weighted imaging, long-term dimensional stability, and maintenance-free operation without draining or refilling. The low dielectric constant of mineral oil also permits dielectric-resonance-free use at high magnetic field strengths.









The system includes mature client-based image analysis software with a built-in DICOM receiver for efficient file transfer, eliminating cloud uploads and associated IT challenges. Automated control point detection and harmonic analysis deliver results in as little as 10 minutes from phantom setup. Advanced tools separate distortions caused by main magnetic field inhomogeneities from those caused by gradient nonlinearities, while ROI selection enables focused analysis for applications such as SRS. Data visualization, trending, comparison tools, and customizable automated reports, including full DVF spreadsheet export, support comprehensive distortion assessment.

The QUASAR MRID^{3D} provides a fast and light solution designed to quantify machine-induced distortions while minimizing magnetic field perturbations that could bias measurements.

ADDITIONAL NEW QA CAPABILITIES
- Rapid Ferrous Content Detection QA Procedure
- Submillimeter Laser Landmark Alignment Check
- Characterization of Z Gradient Non-linearity
- Phantom Position and Twist Verification

MRI DATA ACQUISTION RECOMMENDATIONS
- 3D T1 weighted fast gradient echo sequence with 1 signal average, minimum TE and TR, small flip angle ~10 minute acquisition time @ 1.5T, ~5 minute acquisition time @ 3T
- 410 mm field of view (FOV) in-plane with 385 mm FOV in-slice thickness direction
- 1 mm3 to 1.5 mm3 Isotropic (cubic) voxels
- Bandwidth Range: 100 Hz / Pixel to 1,000 Hz / Pixel (25 KHz to 250 KHz)

RECOMMENDED SYSTEM REQUIREMENTS

Operating System:	Windows 7 SP1 or higher
Processor:	Intel Core™ i7 or better
RAM:	8 gigabyte [GB] or more
Screen Resolution:	1920 x 1080 pixels
Graphics Card:	Intel HD Integrated Graphics or Nvidia GeForce GTX 750 or better

PRODUCT SPECIFICATIONS

Phantom Material:	Acrylic
Density:	1.18 g/cm^3
Weight:	21 kg
Volume Susceptibility:	χv= -9.01 x 10-6 @ 20°C
Contrast Media:	5 liters of high T1 contrast Paraffinic Mineral Oil
Volume Susceptibility:	χv= -9.24 x 10-6 @ 20°C
Density:	0.83 g/cm^3, T1= ~300ms @1.5T, Dielectric Constant εr <3

PRODUCT DIMENSIONS

Physical:	39.4 cm diameter x 39.4 cm long
Imaging:	36.8 cm diameter x 32.1 cm long
Internal Hollow Volume:	25 liters = 25 kg weight reduction compared to conventional grid phantoms

PRODUCT INFORMATION

QUASAR MRID3D Geometric Distortion Analysis System Includes:

- 1-Software License
- 1-Phantom
- User's Guide
- 500-5040 Additional Software License
- 500-5042 Annual Maintenance Contract with Extended Hardware Warranty
- 500-5043 Unlimited Software License

QUASAR MRID3D_Br._E_Rev1._0826 | © IBA 2026 | All rights reserved.
Depicted product images may differ from the actual scope of delivery. Technical specifications and product features are subject to change without notice.
All product and company names are trademarks™ or registered® trademarks of their respective owners. Use of them does not imply any relationship, sponsorship, or endorsement between IBA or its products and the owners of these trademarks.
*QUASAR is a trademark registered in the name of IBA Dosimetry GmbH in the European Union, the United Kingdom, Canada, and the United States.

Certified B Corporation

IBA Dosimetry
Bahnhofstrasse 5 | 90592 Schwarzenbruck, Germany
Independent & Integrated Quality Assurance
sales-therapy@iba-group.com | iba-dosimetry.com
@ibadosimetry