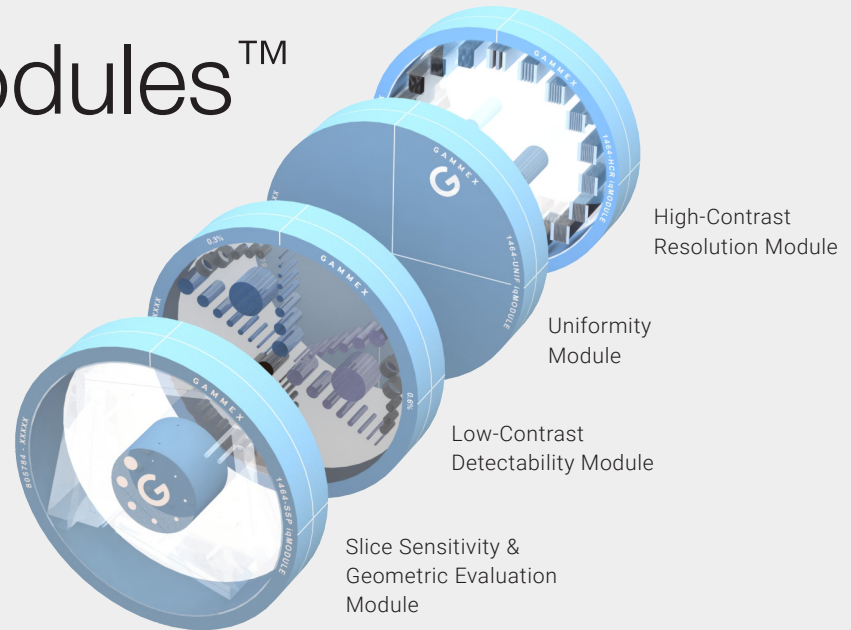


Advanced iqModules™

Comprehensive Image Quality QA

Perform QA on sophisticated CT features within your CT system. Use the Advanced iqModules alone for unparalleled capabilities, or combine with other Gammex phantoms for further value.



To address continual advances in CT technology, we developed the Advanced iqModules — a set of phantoms featuring a robust suite of image quality tests, including high-contrast resolution, low-contrast detectability, slice sensitivity, geometric evaluation, and uniformity.

Now you can perform QA on advanced CT features within your high-end CT system. The Advanced iqModules enable you to verify resolution up to 32 lp/cm, evaluate low contrast detectability with the widest range of test objects, and use a broad range of methods to evaluate Slice Sensitivity. With unmatched versatility at an economical cost, these modules are a high value for your clinic.

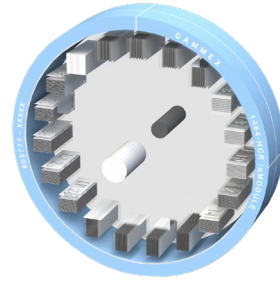
In addition to base functionality, they work in combination with our CT ACR 464, Cone-Beam Electron Density, and Multi-Energy CT Phantoms for testing image quality and other parameters concurrently.

We've taken modularity to the next level with flexibility to independently verify a broad set of parameters.

- Combined with the CT ACR 464 Phantom, these modules will expand your QA set to independently verify your advanced CT systems.
- Combined with the Cone-Beam Electron Density or the Multi-Energy Phantoms, these modules create a robust system for testing image quality and other parameters such as dose distributions concurrent with evaluating Multi-Energy CT performance and performing HU calibrations.

High-Contrast Resolution Module

This module adds line pairs with resolutions up to 32 lp/cm (156 microns) to test even the most demanding scanners.



Features & Benefits

- Incorporates all resolutions of the CT ACR 464 Phantom
- Includes high resolutions up to 32 lp/cm
- Large bar patterns (1.5 cm x 1.0 cm x 4.0 cm) for ease of visualization and analysis
- Designed for automation
 - Includes solid samples of resolution materials for accurate results during software analysis¹
- Zinc high-contrast material provides visibility without over-ranging scanners

Specifications

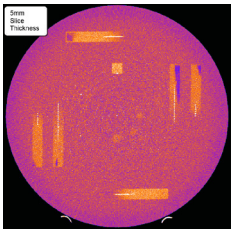
Material:	Epoxy interior, with a shell of and core of our new HE CT Solid Water [®]
Diameter:	20.0 cm (7.9 in)
Length:	4.0 cm (1.57 in)
Resolution Pattern Size:	1.5 cm x 1.0 cm x 4.0 cm
Resolutions Tested:	2, 4, 5, 6, 7, 8, 9, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30 and 32 lp/cm
Automated Analysis Features:	Solid material samples improve computational analysis Large pattern sizes enable robust evaluation
Contrast Material:	Zinc
Warranty:	5 years

Slice Sensitivity & Geometric Evaluation Module

This module includes wires, bead ramps, and spherical objects to validate slice thickness, slice sensitivity profile, and system geometry.



Features & Benefits



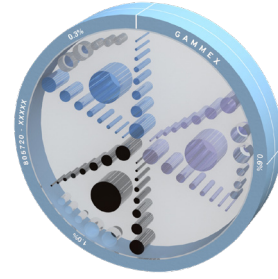
- Measure slice thickness with an opposed pair of wire ramps
- Measure slice thickness and slice sensitivity profile with 2 opposed pairs of bead ramps
- Calculate Modulation Transfer Function with one-off vertical wire
- Check geometric accuracy with a set of 8 acrylic spheres
- Perform MTF measurements with BB's of two different sizes
- Easily visualize test objects with clear construction and modular design
- Designed for manual and automated analysis

Specifications

Material:	Epoxy interior, with a shell of our new HE CT Solid Water [®]
Diameter:	20.0 cm (7.9 in)
Wire Ramps:	Tungsten wire, 0.05 mm diameter
Bead Ramps:	One opposed set with 0.18 mm tungsten carbide BB's, and one with 0.28 mm tungsten carbide BB's
MTF BB's:	0.18 mm and 0.28 mm
MTF Wire:	Tungsten wire, 5 degrees off-vertical, 0.05 mm diameter
Acrylic Spheres:	1.0, 1.5, 2.0, 3.0, 4.0, 6.0, 8.0, and 10.0 mm diameter
Warranty:	5 years

Low-Contrast Detectability Module

Test the low contrast detectability of even the most demanding CT scanners using three contrast levels, scientifically sized objects, and noise-robust redundancy.



Features & Benefits

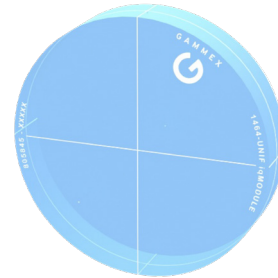
- Evaluate Low Contrast Detectability at 3 different contrast levels
 - 0.3%, 0.6%, and 1.0% (3 HU, 6 HU, and 10 HU)
- Sizes of each contrast object range from 1.5 to 25 mm
- Multiple contrast objects at each size for noise robustness
- Three precisely formulated contrast levels test performance across a range of scanners and protocols
- Robust against noise with two objects at each contrast and size below 25 mm
- Tests full-slice and sub-slice detectability

Specifications

Material:	Epoxy interior, with a shell of our new CT High Equivalency Solid Water®
Diameter:	20.0 cm (7.9 in)
Length:	4.0 cm (1.57 in)
Contrast Levels:	0.3 % (3 HU), 0.6 % (6 HU), 1.0 % (10 HU)
Sizes at Each Contrast Level:	25 mm, and two each of 1.5, 2, 3, 4, 5, 7, 9, and 12 mm
Sizes of Sub-Slice Objects:	2, 3, 5, 7, and 10 mm (cylinder diameter and length), at each contrast level
Warranty:	5 years

Uniformity Module

This phantom allows CT number uniformity assessment. Combine all four Advanced iqModules for a self-contained CT image quality solution.



Features & Benefits

- Measure uniformity and noise
- Measure distance and calibrate pixel size using 2 embedded BBs spaced 100 mm apart
- Supports calculations of MTF, NPS, and other noise-related metrics
- Constructed of HE CT Solid Water for unparalleled water equivalency across the energy spectrum
- Combine with other Gammex Advanced iqModules for comprehensive image quality testing
- Doubles as an extension plate for use with the CT ACR 464 Phantom and other Advanced iqModules

Specifications

Material:	HE CT Solid Water®
Diameter:	20.0 cm (7.9 in)
Length:	4.0 cm (1.57 in)
Tungsten Carbide Beads:	0.28 mm (0.011 in) in diameter grade 25 Tungsten Carbide beads
Warranty:	5 years

Certifications

Product complies with MDD 93/42/EEC.

Gammex, a Sun Nuclear company, is certified to ISO 13845.

¹ RapidCHECK software is available for the CT ACR 464 and in development for the Advanced iqModules.