QA PHANTOMS

peo MEDICAL

Table of contents

← Back to Table of Contents

Partner Bertin Technologies

Bertin Technologies is a global provider of advanced radiation detection and environmental monitoring solutions, specializing in handheld monitors, personal electronic dosimeters, environmental monitoring systems, and waste & recycling management technologies. Their instruments are designed to meet the rigorous demands of nuclear facilities, emergency response teams, and environmental agencies.

Product offering

Model 551 Accreditation Phantom for Uniformity – CIRS

Model 057A Triple Modality 3D Abdominal Phantom – CIRS

Model 040GSE Multi-Purpose, Multi-Tissue Ultrasound Phantom – CIRS

Models 014A, 014AD, 014B, 014F Mammography Phototimer Consistency Testing Slabs – CIRS

Model 020 BR3D Breast Imaging Phantom – CIRS

Model 551 Accreditation Phantom for Uniformity – CIRS

A continuous QC program identifies problems before they impact the diagnostic value of ultrasound exams and assures equipment is functioning properly. Research has demonstrated that the most common failure in the ultrasound imaging system is the transducer as they are easily damaged by stress, dropping and kinked cables1. Accreditation programs now recommend all scanners and all transducers be tested quarterly and must be tested at least semiannually by performing an image uniformity and artifact survey2.

The CIRS Model 551, Accreditation Phantom for Uniformity, aids appropriately trained personnel in identifying the presence of lateral and/or axial streaks, i.e. artifacts, on any ultrasound transducer. Presence of artifacts is an indication of transducer damage and triggers corrective action.

The phantom consists of a uniform block of Z-SkinTM that is elastic enough to conform to any shape transducer. Z-Skin is durable enough to withstand the probe pressure to maintain coupling with all the elements of even the tightest curvilinear arrays.

1. American College of Radiology. (2013, October 28). Ultrasound Accreditation Program Requirements. Retrieved from http://www.acr.org/~/media/ACR/Documents/Accreditation/US/Requirements.pdf

2. Hangiandreou NJ, Stekel SF, Tradup DJ, Gorny KR, King DM. Four-year experience with a clinical ultrasound quality control program. Ultrasound Med Biol. 2011;37(8):1350-7.

Features

- Simple, compact design makes phantom easy to transport and store
- Cost-effective solution to fulfill accreditation Routine QC Program requirements
- Durable materials for extended phantom life
- Soft phantom material conforms to shape of most ultrasound transducers

Contact our product specialist or download the datasheet.

← Back to partner

Diagnostic Imaging › QA phantoms

Model 057A Triple Modality 3D Abdominal Phantom – CIRS

The CIRS Triple Modality 3D Abdominal Phantom is constructed of a self-healing formulation of Zerdine®(1) that allows multiple biopsy insertions with minimal needle tracking, and is ideal for demonstrating image-guided navigation technologies.

Abdominal imaging is useful for diagnosing disease and monitoring treatments. The Model 057A is representative of a small adult abdomen and can be imaged under CT, MR and ultrasound. This feature makes the phantom a useful tool for applications such as image fusion studies; imaging protocol developments; scan technique training; and system testing, validation and demonstration.

The Model 057A simulates the abdomen from approximately the thorax vertebrae (T9/T10) to the lumbar vertebrae (L2/L3) using simplified anthropomorphic geometry. The materials provide contrast between the structures under CT, MR and ultrasound. The solid polymer background gel will not leak when punctured.*

Internal structures include the liver, the portal vein, two partial kidneys, a partial lung, the abdominal aorta, the vena cava, a simulated spine and six ribs. The liver has six lesions and the kidneys each have one lesion. A muscle layer and outside fat layer surround these structures and plastic end caps make the phantom durable enough for extended scanning. Blood vessels have CT contrast added to provide enhanced auto registration in image fusion applications

The Phantom includes a foam lined hard carry case. To accommodate image fusion techniques, CIRS can offer value-added options and services such as phantom specific CMM, reference CT or MRI data sets, attachment of customer specific registration devices and inclusion of special point markers.

Features

- Demonstrate CT, ultrasound and MRI scan techniques
- Assess image fusion algorithms
- Test new equipment
- Validate automated biopsy systems
- Optimize imaging protocols
- Improve performance of freehand abdominal biopsies

Contact our product specialist or download the datasheet.

Model 040GSE Multi-Purpose, Multi-Tissue Ultrasound Phantom – CIRS

The CIRS Model 040GSE Multi-Purpose, Multi-Tissue Ultrasound Phantom is the most complete solution available for performance and quality testing. It contains nine performance measurements, including grey scale targets, anechoic stepped masses and elasticity targets.

This is the only QA phantom on the market that provides both elasticity targets and all the standard B-mode imaging test objects.

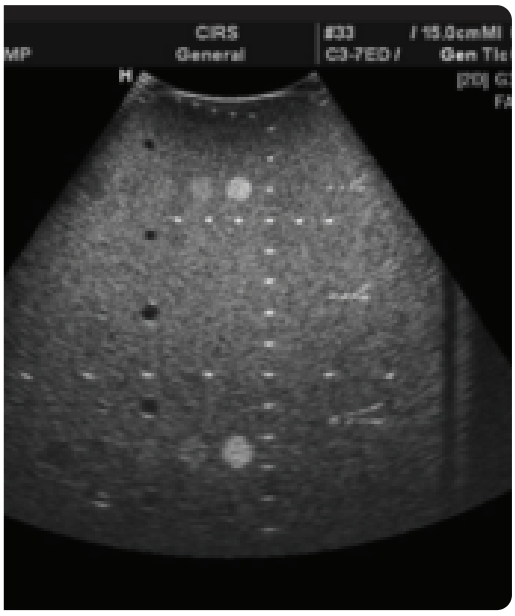
FEATURES

The unique dual attenuation of the background gel allows for evaluation of transducers that range from 2 MHz – 15 MHz. A removable water well and endocavity cover extends the use of the phantom by allowing evaluation of all transducer configurations: linear, curvilinear and intercavity.

All of CIRS' ultrasound QA phantoms come standard with a robust housing, rugged carry case, 48-month warranty, and a userguide.

BENEFITS

- Unique dual attentuation design allows testing on low frequency abdominal probes up to 5 MHz and high frequency probes to 15 MHz and higher.
- Detachable water wells allow for testing curvilinear and endocavity probes.
- Only general purpose QA phantom on the market with elasticity.
- Ensure over ten years of reliable use through reinspection and repair services.



KEY TESTS WITH MODEL 040GSE

- Uniformity
- Depth of penetration

- Beam profile/ Focal zone/ Lateral response width
- Vertical distance measurement
- Horizontal distance measurement
- Axial and lateral resolution
- Elevational resolution
- Contrast resolution
- Grayscale contrast sensitivity
- Elasticity sensitivity
- Dead zone assessment

If you want more information, go to our partner’s site!

Diagnostic Imaging › QA phantoms

Models 014A, 014AD, 014B, 014F Mammography Phototimer Consistency Testing Slabs – CIRS

CIRS Phototimer Consistency Testing Slabs / Test Tool are designed for precise assessment of AEC system performance in accordance with American College of Radiology and MQSA recommendations. BR-12 (47% glandular / 53% adipose) is most commonly used but other glandular equivalencies are available. Unlike acrylic, these testing slabs are manufactured with very tight thickness tolerances and more accurately simulate real breast tissue over the range of energies used in mammography.

Models 014A, 014AD, 014B, 014F Mammography Phototimer Consistency Testing Slabs features

- assess AEC system performance
- comply with ACR & MQSA recommendations
- available in multiple configurations

Contact one of our product specialists.

Model 020 BR3D Breast Imaging Phantom – CIRS

The Model 020 BR3D Breast Imaging Phantom has been designed to assess discoverability of different size lesions within a tissue equivalent, heterogeneous, complex background. This phantom delivers more realistic challenges for standard screen and FFDM mammography systems as well as Breast Computed Tomography and Tomosynthesis.

Model 020 BR3D Breast Imaging Phantom features:

- complex background provides greater challenge for target detection
- slabs with different gland-to-adipose ratios by weight are available by request
- tests Breast Computed Tomography and Tomosynthesis
- more representative than standard homogenous phantoms

Read more about the Model 020 BR3D Breast Imaging Phantom on the CIRS website

← Back to Table of Contents

Partner Sun Nuclear Corporation

Sun Nuclear is a leading provider of comprehensive Quality Management solutions for radiation therapy and diagnostic imaging. Their portfolio encompasses positioning systems, dosimetry tools, QA phantoms, detectors, dose rate monitoring devices, analysis software, and training phantoms. These solutions are designed to support medical professionals in ensuring accurate, safe, and efficient patient care.

Product offering

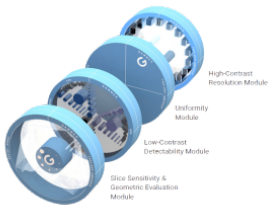
Elasticity QA Phantom (model 049) – CIRS

Image-Guided Abdominal Biopsy Phantom (model 071B) – CIRS

Model 1425 – Doppler Flow System – Sun Nuclear

Model 1430 – Mini-Doppler Flow System – Sun Nuclear

Advanced iqModules™ – Sun Nuclear



Mercury 4.0 Phantom – Sun Nuclear

Model 164A – Stereotactic Breast Biopsy Phantom – Sun Nuclear

Model 083 – Soft Carrying Case – Sun Nuclear

Model 711-HN ATOM Max Dental & Diagnostic Head Phantom – CIRS

Model 404 – Precision Small Parts Grey Scale Phantoms – Sun Nuclear

Model 405 – Precision Resolution Grey Scale Phantom – Sun Nuclear

Model 406 – Dual Attenuation Phantom – Sun Nuclear

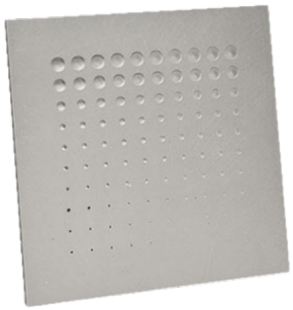
Model 408 – Spherical Lesion Phantom – Sun Nuclear

Model 416 – Ultrasound Transducer Evaluation Device UTED – Sun Nuclear

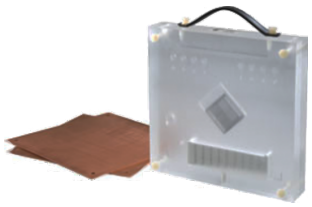
Model 411 – LE Tissue Mimicking QC Phantom – Sun Nuclear

Model 410 – Multi-Purpose Accreditation Phantom – Sun Nuclear

Model 1151 – Radiographic Contrast / Detail Phantom – Sun Nuclear

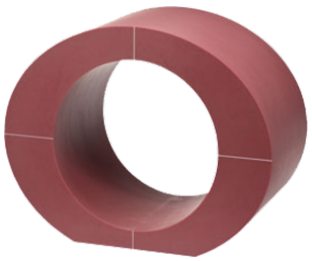


Model 170NJ – Radiographic Survey Phantom – Sun Nuclear



Model 610 – Neonatal Chest Phantom – Sun Nuclear

Model 464-Ring – CT Phantom Extension – Sun Nuclear



CT ACR 464 Phantom – Sun Nuclear

Model 464 – ACR CT Accreditation Extension Plates – Sun Nuclear

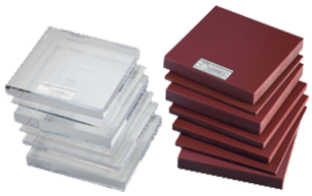
Model 183 – Routine Mammographic QC Kit – Sun Nuclear

Model 182M – Mammographic QC Kit – Sun Nuclear

Model 179 – Artifact Identification Phantom – Sun Nuclear

Model 118 – Mammographic Aluminum Stepwedge – Sun Nuclear

Model 159A / 159A-BR – Mammographic Phototimer Consistency Tool – Sun Nuclear



Model 150K – Mammographic DCF Test Tool – Sun Nuclear

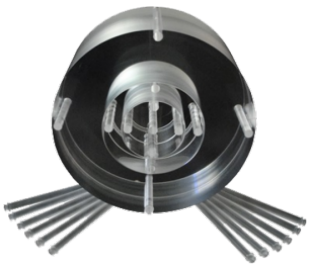
Model 429 – Ultrasound Biopsy Phantom – Sun Nuclear

Model 156D – Stereotactic Mammographic Accreditation Phantom – Sun Nuclear

Model 157A – Mammographic Film/Screen Contact Test Tool – Sun Nuclear

Model 156 – Mammographic Accreditation Phantom – Sun Nuclear

Model 468 – CT Dose Index Phantom – Sun Nuclear



Elasticity QA Phantom (model 049) – CIRS

The Elasticity QA Phantom (model 049 & 049A) is a tool you can use for both shear wave and compression elastopraphy. These models are the only phantoms commercially available for sonoelastography quality assurance. The phantoms contain targets of known stiffness relative to the background material and range in stiffness, diameter and depth.

Both phantoms come standard with a four-year warranty and carry case.

The Model 049 is a basic QA phantom as it contains two sizes of spheres positioned at two different depths. At each depth there are two spheres that are softer than the background and two that are harder than the background.

Model 049A has a broader range of target sizes than the 049. This phantom has stepped mass targets instead of spheres. Each stepped mass consists of six diameters so that you can evaluate the ability to visualize targets that are located at the same depth and have the same relative stiffness but vary in diameter.

Both models are housed in the same size container as the original Model 049.

ELASTICITY QA PHANTOM FEATURES

- Four types of lesions with discrete elastic moduli
- Compatible with both shear wave and compression elastography
- Customized versions available for magnetic resonance elastography
- Ensure over ten years of reliable use through reinspection and repair service

The phantoms are suitable for determining dynamic range, checking system performance over time, training and demonstrating, and research and development.

If you want to read more about these models, take a look at our partner’s website!

Diagnostic Imaging › QA phantoms

Image-Guided Abdominal Biopsy Phantom (model 071B) – CIRS

The Image-Guided Abdominal Biopsy Phantom is a simplified abdominal phantom. It's suitable for training and demonstrating image-guided needle biopsy navigation tools or procedures that require a constant visual reference for needle placement. The phantom allows many uses over time because of the background gel minimizes needle tracks when punctured.

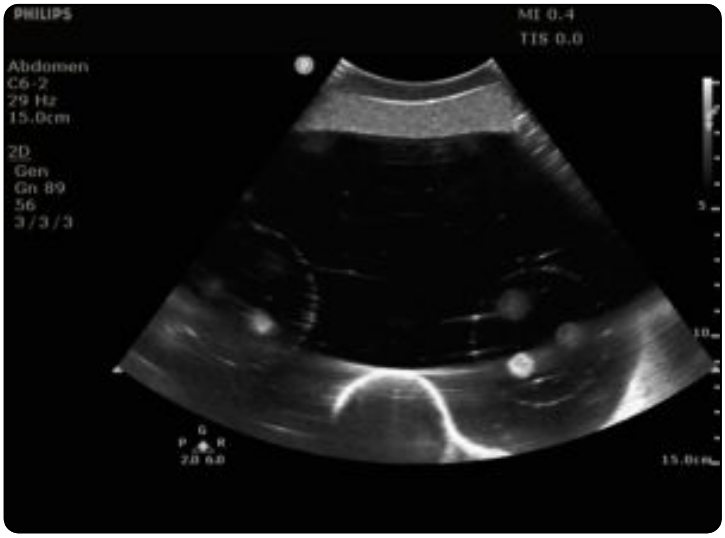
The phantom contains 12 lesions, 5-12 mm in diameter, positioned in groups of three in consistent locations within the phantom. It also includes simulated spine and ribs, and an "H" marker within the spine to assist in determining the head side within a CT-image. You can see the lesions and spine under ultrasound, CT and MRI. The solid polymer gel background is anechoic and will also not leak when it is punctured.

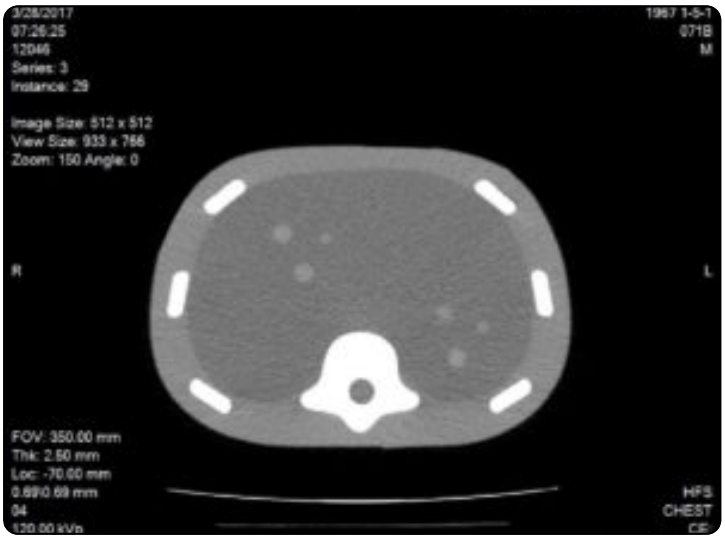
The phantom also includes a foam lined hard carry case and it's useful in multiple fields. The phantom is perfect for CT, Ultrasound and MRI, live scanning and biopsy training.

IMAGE-GUIDED ABDOMINAL BIOPSY PHANTOM FEATURES

- Improve performance of freehand abdominal biopsies
- Minimal needle tracking- Z-skin fat layer and softer gel provide better self-healing properties
- Validate automated biopsy systems
- Suitable for CT, MRI and Ultrasound

If you want to read more about this phantom, take a look ar our partner's website!


PHILIPS
MI 0.4
TIS 0.0
Abdomen
C6-2
29 Hz
15.0cm
2D
Gen
Gn 89
56
3/3/3


3/28/2017
07:26:25
12046
Series: 3
Instance: 29
Image Size: 512 x 512
View Size: 933 x 766
Zoom: 150 Angle: 0
1967 1-5-1
071B
M
R
L
FOV: 350.00 mm
Thk: 2.50 mm
Loc: -70.00 mm
HFS
CHEST

Model 1425 – Doppler Flow System – Sun Nuclear

The Doppler Flow System from Sun Nuclear (formerly Gammex) tests both Doppler and B-mode ultrasound systems in a single unit. The compact, easy to store and transport designed system combines the flow system, phantom and electronic flow controller into a single unit. Scanner selection, quality control testing, training and research can all be performed using this multi-faceted ultrasound tool. A wide range of targets and vessels are included in the unit.

Doppler Flow System features:

- the Choice of attenuations of 0.5 or 0.7 dB/cm/MHz
- combines low echo matrix with line reflectors and anechoic cyst targets at 2, 4 and 6 mm depths
- two 5mm vessels in the system adhere to FDA Doppler sensitivity recommendations.
- flow controller with a range of 1 to 12.5 ml/sec
- 5 preset pulse flow patterns

Do you want to know more about the Doppler Flow System?

If you want to continue your search for additional information on this product try this link.

Diagnostic Imaging › QA phantoms

Model 1430 – Mini-Doppler Flow System – Sun Nuclear

The Doppler Flow System tests both Doppler and B-mode ultrasound systems in a single unit. The compact, easy to store and transport designed system combines the flow system, phantom and electronic flow controller into a single unit. Scanner selection, quality control testing, training and research can all be performed using this multi-faceted ultrasound tool. A wide range of targets and vessels are included in the unit.

Mini-Doppler Flow System features:

- the Choice of attenuations of 0.5 or 0.7 dB/cm/MHz
- includes 404GS LE components with Grey Scale targets
- combines low echo matrix with line reflectors and anechoic cyst targets at 2, 4 and 6 mm depths
- two 4 mm vessels in the system adhere to FDA Doppler sensitivity recommendations.
- flow controller with a range of 0 to 10 ml/sec
- 8 preset pulse rates

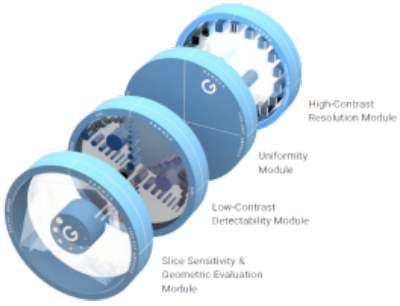
Do you want to know more about the Mini-Doppler Flow System?

If you want to continue your search for additional information on this product try this link.

Advanced iqModules™ – Sun Nuclear

Expanded Image Quality CT QA

Perform robust image quality testing of advanced CT systems with Advanced iqModules from Sun Nuclear (formerly Gammex). This set of 4 modules provides comprehensive testing of high-contrast resolution, low-contrast detectability, slice sensitivity, geometric evaluation, and uniformity.



Unmatched Image Quality Testing

Versatile and unique, the Advanced iqModules offer resolution up to 32 lp/cm, the widest range of test objects to evaluate low contrast detectability, and a broad range of methods to evaluate Slice Sensitivity.

Modular CT QA Support

Combine modules with the CT ACR 464 Phantom for expanded, independent CT QA. Or, combine them with the Advanced Electron Density Phantom or the Multi-Energy Phantom, to 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.

Low-Contrast Detectability Module

Use this module to test the low-contrast detectability of the most demanding CT scanners.

- Test performance across scanners and protocols with 3 different contrast levels

0.3%, 0.6%, and 1.0% (3 HU, 6 HU, and 10 HU)

- Ensure robustness against noise with multiple contrast objects

Sized from 1.5 to 25 mm with two of each size

High-Contrast Resolution Module

Use this module to expand your CT ACR 464 testing.

- Includes all resolutions from the CT ACR 464 Phantom, plus high resolution up to 32 lp/cm
- Large bar patterns offer easy visualization and analysis
- Zinc high-contrast material provides visibility without over-ranging scanners

Slice Sensitivity & Geometric Evaluation Module

Use this module to validate slice thickness, slice sensitivity profile, and system geometry.

- Measure slice thickness and slice sensitivity profile with an opposed pair of wire ramps and 2 opposed pairs of bead ramps
- Calculate Modulation Transfer Function with one-off vertical wire
- Check geometric accuracy with 8 acrylic spheres
- Perform MTF measurements with BBs of two different sizes

Uniformity Module

Use this module to assess CT number uniformity.

- Measure uniformity and noise
- Measure distance and calibrate pixel size using 2 embedded BBs spaced 100 mm apart
- Calculate MTF, NPS, and other noise-related metrics
- Doubles as an extension plate for use with the CT ACR 464 Phantom and other Advanced iqModules

Read the full specifications, benefits and scope in datasheet.

Links

Advanced Electron Density Phantom link – https://www.sunnuclear.com/products/advanced-electron-density-phantom

CT ACR-464 Phantom link – https://www.sunnuclear.com/products/ct-acr-464-phantom

RapidCHECK Diagnostic QA Software – https://www.sunnuclear.com/products/rapidcheck-software

View Sun Nuclear website: https://www.sunnuclear.com/products/multi-energy-ct-phantom

← Back to partner

Diagnostic Imaging › QA phantoms

Mercury 4.0 Phantom – Sun Nuclear

This Advanced CT Performance Assessment Phantom makes it possible to characterize advanced CT features, including Automatic Exposure Control and Iterative Reconstruction, to support protocol optimization and proper dose management for your patients.

Characterization for Effective Dose Management

The Mercury 4.0 Phantom addresses performance and effectiveness of Automatic Exposure Control / Tube Current Modulation, and evaluates image quality for Iterative Reconstruction.

TG-233 Compliance

Meet AAPM Task Group 233 requirements for performance evaluation of CT systems.

Advanced CT Metrics

Collect and analyze data for advanced CT testing recommended by AAPM Task Group 233:

- Automatic Exposure Control
- Noise Power Spectrum
- Modulation Transfer Function & Task Transfer Function
- Detectability (d’)
- Cone-beam artifacts
- Superior-Inferior resolution

If you want to know more, take a look at our partner’s website!

Model 164A – Stereotactic Breast Biopsy Phantom – Sun Nuclear

The Stereotactic Breast Biopsy Phantom form Sun Nuclear (formerly Gammex) is designed to be used as a training phantom for performing biopsy procedures. It provides a good representation of breast tissue.

Multiple radiopaque lesions are impeded in the phantom to permit multiple uses of the phantom by different personnel.

Model 164A Stereotactic Breast Biopsy Phantom features:

- made of clear gel encased in a soft vinyl for easy compression and a skin-like resistance to needle insertion
- embedded in the gel are radiopaque lesions ranging in size for practicing core biopsies
- liquid dye filled lesions allow for the practice of fine needle aspiration
- compressible within a biopsy instrument

If you want to continue your search for additional information on this product try this link.

Model 083 – Soft Carrying Case – Sun Nuclear

This Soft Carrying Case is designed to protect and transport the Gammex/ Sun Nuclear Ultrasound phantom that is placed in it. It is compact and easy to clean if it becomes soiled.

The case can be used with any of the Gammex/ Sun Nuclear Ultrasound phantoms except the Doppler Flow System (1425A LE) or the (1430LE).

Soft Carrying Case features:

- shoulder strap for easy carrying
- foam-lined for protection of the phantom and other contents
- specifically designed for holding the Gammex Ultrasound phantoms
- made of durable material for long lasting protection of the phantom

Diagnostic Imaging › QA phantoms

Model 711-HN ATOM Max Dental & Diagnostic Head Phantom – CIRS

The Model 711-HN ATOM Max Dental & Diagnostic Head Phantom is a standard of reference for diagnostic radiology of the head. The phantom has been developed to assist clinical and technical staff in the monitoring, selection, verification and training of scanning parameters common to most radiological procedures requiring fine anatomical details.

Model 711-HN ATOM Max Dental & Diagnostic Head Phantom features:

- tissue Equivalent from 50 keV to 25 MeV
- carrying case included
- includes detailed anatomical features
- Frankfurt plane identified to ensure proper alignment
- positioning stand with six degrees-of-freedom
- easy to set up and use

Read more about the Model 711-HN ATOM Max Dental & Diagnostic Head Phantom on the CIRS website

Model 404 – Precision Small Parts Grey Scale Phantoms – Sun Nuclear

The 404GS LE precision Small Parts Grey Scale Phantom provides advanced technology for measuring image quality of small parts and intra-cavity ultrasound scanning systems. The phantom also contains grey scale parts for additional measurement capability.

The 404 LE has the same general target layout and specifications as the 404GS LE but it does not include grey scale targets.

Both Sun Nuclear phantoms incorporate the latest Gammex Tissue Mimicking gel technology to provide a smoother background texture than what is provided by conventional tissue mimicking gels.

The convertible water dam permits easy changeover for its use or non-use. It is included on both the 404GS LE and the 404 LE.

Precision Small Parts Grey Scale Phantoms features:

- the phantom utilizes the unique Tissue Mimicking gel of Gammex
- combination of anechoic cyst, grey scale and pin targets to permit a wide range of testing.
- convertible water dam
- measure to depths of up to 9 cm
- varying sizes and depths of each type of target
- resolution patterns and all vertical and horizontal targets are made of 0.1 mm nylon fibers
- low scatter cysts of 1, 2, 4 and 7 mm diameters to better evaluate system noise and distortion

Model 405 – Precision Resolution Grey Scale Phantom – Sun Nuclear

The Precision Resolution Grey Scale Phantom is designed to work with high resolution ultrasound systems.

Sun Nuclear's 405GSX LE incorporates the latest Gammex Tissue Mimicking gel technology to provide a smoother background texture than what is provided by conventional tissue mimicking gels. The phantom contains all of the quality indicators for performing a wide range of evaluations. Grey scale targets are included in the phantom.

The convertible water dam permits easy changeover for its use or non-use.

Precision Resolution Grey Scale Phantom features:

- the phantom utilizes the unique Tissue Mimicking gel of Gammex
- combination of anechoic cyst, grey scale and pin targets to permit a wide range of testing.
- convertible water dam
- reference markers within the phantom permits exact alignment of transducer each time testing is performed
- measure to depths of up to 16 cm
- varying sizes and depths of each type of target

Model 406 – Dual Attenuation Phantom – Sun Nuclear

The Sun Nuclear (formerly Ga Dual Attenuation Phantom is essentially 2 phantoms in 1. The phantom permits quality control tests over a wide range of frequencies.

The 406 LE is a highly effective instrument for demonstrating superior image quality while challenging high performance ultrasound systems. The phantom provides a comprehensive profile of the scanner's overall image quality.

Dual Attenuation Phantom features:

- contains both 0.5 and 0.7 dB/cm/MHz attenuations in a side-by-side configuration
- the phantom uses the Gammex Tissue Mimicking gel with a smoother background texture.
- the Phantom uses a composite film scanning surface with improved transmission properties
- the phantom has target depths to 16 cm deep
- resolution patterns and all vertical and horizontal targets are constructed of 0.1 mm nylon fiber.
- three sets of axial resolution targets.
- scatter-free cylinders of 2, 4 and 6 mm diameter that mimick blood vessels

Do you want to know more about the Dual Attenuation Phantom?

If you want to continue your search for additional information on this product try this link.

Diagnostic Imaging › QA phantoms

Model 408 – Spherical Lesion Phantom – Sun Nuclear

This Spherical Lesion Phantom from Sun Nuclear (formerly Gammex) is used to test the resolution of Ultrasound scanners. It tests in 3 dimensions: axial, lateral and elevational.

The phantom contains both 2mm and 4mm diameter tissue mimicking spherical lesions which lie in a single plane at the center of the phantom. Axial, lateral and elevational resolution are accouted for simultateously and equally for all types of ultrasound systems and configurations.

Spherical Lesion Phantom features:

- contains both 2mm and 4mm diameter tissue mimicking spherical lesions
- the 2mm section contains 105 anechoic spheres at 0.5cm depther intervals
- the 4mm section contains 211 anechoic spheres at 0.75 depth intervals
- tissue Mimicking gel used provides smoother background texture
- lesions produced with negligible echogenicity while producing no distal enhancement or shadowing
- TM gel optimized for use with tissue harmonics imaging technology
- composite film scanning surface provides improved transmission properties permitting more of the ultrasonic beam to be transmitted and received.

Do you want to know more about the Spherical Lesion Phantom?

If you want to continue your search for additional information on this product try this link.

← Back to partner

Model 416 – Ultrasound Transducer Evaluation Device UTED – Sun Nuclear

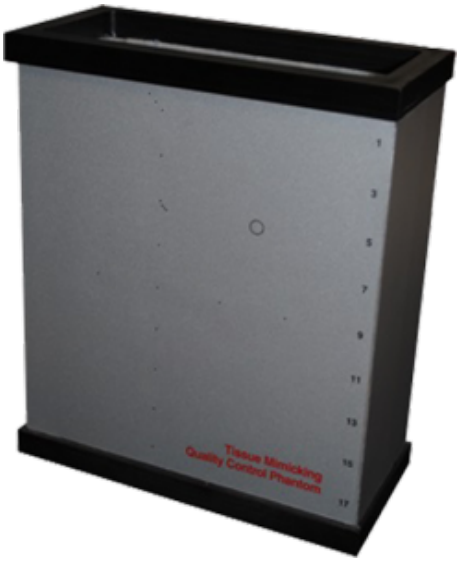
The Ultrasound Transducer Evaluation Device UTED provides an EASY, FAST & ECONOMICAL way to test your transducer elements.

Ultrasound Transducer Evaluation Device UTED features:

- silicone-based phantom
- varying surfaces and chambers
- compact

← Back to partner

Model 411 – LE Tissue Mimicking QC Phantom – Sun Nuclear



The Tissue Mimicking QC Phantom 411 LE is designed to meet the needs of the small ultrasound lab. This phantom provides a standard of quality assurance required for routine testing of ultrasound scanning systems.

411 LE Tissue Mimicking QC Phantom features:

- the phantom utilizes the unique Tissue Mimicking gel of Gammex
- one mid-depth axial resolution target at 6 cm with pins spaced at 0.5, 1 and 2 mm.
- single 6 mm diameter anechoic cyst at 5 cm
- all pin targets are constructed of 0.374 mm nylon fibers

← Back to partner

Model 410 – Multi-Purpose Accreditation Phantom – Sun Nuclear

The 410 family of Multi-Purpose Accreditation Phantom lets you pick and choose what level of testing is right for your quality assurance program. All 410 phantoms will allow you to evaluate uniformity and artifacts, geometric accuracy and system sensitivity. This phantom provides a standard of quality assurance required for routine testing of ultrasound scanning systems.

Multi-Purpose Accreditation Phantom features:

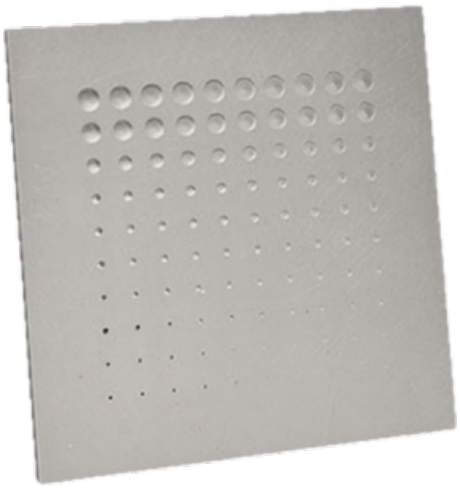
- the phantom utilizes the unique Tissue Mimicking gel of Gammex
- multiple scanning surfaces to easily test all types of transducer shapes
- uniformity Assessments
- sensitivity Assessment Dead zone Assessments
- harmonic Imaging

Do you want to know more about the Multi-Purpose Accreditation Phantom?

If you want to continue your search for additional information on this product try this link.

Diagnostic Imaging › QA phantoms

Model 1151 – Radiographic Contrast / Detail Phantom – Sun Nuclear



This Radiographic Contrast / Detail Phantom from Sun Nuclear (formerly Gammex) is used to determine the threshold contrast characteristics and to monitor performance of a radiographic or fluroscopic system.

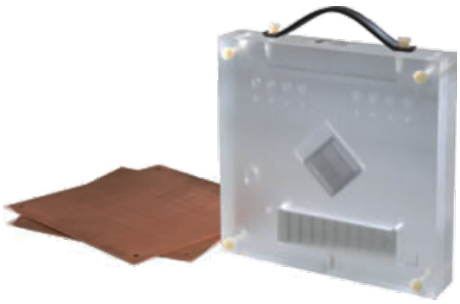
The phantom is an aluminum plate with a matrix of holes. All of the holes in a given row have a constant depth. All of the holes in a given column have a constant diameter. From this a 10 point curve is constructed by observing the shallowest depth hole that can be seen for each hole diameter.

Radiographic Contrast / Detail Phantom features:

- aluminium construction
- easy to use tool
- easy to transport

← Back to partner

Model 170NJ – Radiographic Survey Phantom – Sun Nuclear



The Sun Nuclear (formerly Gammex) 170NJ phantom provides a simple and reproducible test tool for interfacility surveys and intra-department comparison of radiographic systems.

For routine quality control, the phantom images provide a rapid assessment of high contrast resolution, low contrast detectability, radiographic exposure consistency as well as radiation light-field alignment and collimation accuracy.

Radiographic Survey Phantom features:

- designed to optimize portability and ease of use
- designed for use in 3 ranges of clincal settings:
  - 60 kVp
  - 75 kVp
  - 120 kVp
- each phantom is equipped with a carrying strap, tripod mounting assembly and built-in levels for quick set up and orientation in a variety of clinical settings
- includes 2 thicknesses of Copper plate.

Model 610 – Neonatal Chest Phantom – Sun Nuclear

The Gammex 610 Neonatal Chest Phantom is designed for routine quality assurance monitoring of computed and digital radiography systems.

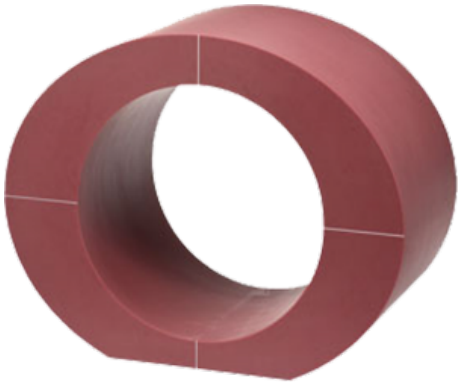
The phantom replicates both the anatomic structure and the tissue attenuation characteristics of a real neonate. The 610 phantom can be imaged using clinical protocols, requiring in a test of the entire imaging chain, including image processing parameters.

The phantom is the first anthropomorphic neonatal phantom that adequately represents a 1-2 Kg neonate in its transmission characteristics, histogram, physical size and structure.

Neonatal Chest Phantom features:

- accurate representation of neonate in transmission characteristics.
- interchangeable lung insert pieces that permit imaging examination of pneumothorax and hyaline membrane conditions
- compact size
- composed of Solid Water material
- light weight custom carrying case

Model 464-Ring – CT Phantom Extension – Sun Nuclear



Users of Sun Nuclear's (formerly Gammex) 464 CT phantom frequently want a better indication of the scanner's performance with a phantom that more accurately mimics a torso. The optional 464-Ring torso adapter permits the use of the 464 Accreditation in this type of application.

The 464 phantom can easily be inserted into the 464-Ring adapter to permit quick imaging in these situations. Users gain the advantage of being able to check the Quality Assurance on 16 different parameters with an anthropomorphic testing phantom in additional to other QA applications they may be required to perform, thus saving money that would otherwise be required for purchase of an entirely new phantom.

The Torso adapter is not a requirement for use in any Quality Assurance testing program.

CT Phantom Extension features:

- Solid Water construction
- made of multiple modules and shaped to better mimic a torso
- white scribed markings help ensure proper alignment
- designed to work exclusively with the 464 CT Phantom

Do you want to know more about the CT Phantom Extension?

If you want to continue your search for additional information on this product try this link.

CT ACR 464 Phantom – Sun Nuclear

The ACR CT Accreditation Phantom from Sun Nuclear (Gammex) is designed to be an integral part of the American College of Radiology (ACR) CT Accreditation Program. This voluntary program provides physicians with an opportunity for a comprehensive peer review of their CT facility, personnel qualifications, image quality and quality assurance programs.

The phantom can be used for initial QA assessment and routine monthly QA testing to help ensure that patients are receiving the lowest possible CT dose.

The Gammex ACR CT phantom is the only phantom authorized for use in the ACR CT Accreditation Program. Gammex submits the phantoms to rigorous quality control testing standards, as outlined by ACR, to assure users of the high level of performance and intergrity of each phantom.

ACR CT Accreditation Phantom features:

- designed to meet specifications of ACR for CT accreditation
- Solid Water construction
- made of 4 modules designed to measure a wide range of scanner parameters
- white scribed markings on the axial coronal and sagittal axis help ensure proper alignment
- measure
  - positioning
  - CT number accuracy
  - alignment
  - slice thickness
  - low contrast resolution
  - CT number uniformity
  - high contrast resolution

Do you want to know more about the ACR CT Accreditation Phantom?

If you want to continue your search for additional information on this product try this link.

Links

RapidCHECK Diagnostic QA Software – https://www.sunnuclear.com/products/rapidcheck-software

Advanced iq modules – https://www.sunnuclear.com/products/advanced-iqmodules

Multi Energy CT Phantom – https://www.sunnuclear.com/products/multi-energy-ct-phantom

View Sun Nuclear website: https://www.sunnuclear.com/products

Model 464 – ACR CT Accreditation Extension Plates – Sun Nuclear

Accurately represent scatter effects from widebeam CT scanners with the ACR 464 extension plates from Sun Nuclear (Gammex). Made from identical solid water materials, these extension plates allow images to begin and end in the same material to eliminate artifacts that may be introduced by scanning in air.

ACR CT Accreditation Extension Plates features:

- this kit includes two Extension Plates with an adjustable stand to accurately represent scatter effects from wide-beam CT scans. The extension plates allow images to begin and end in the same material to eliminate artifacts that may be introduced by scanning in air.
- Solid Water construction
- designed to work exclusively with the 464 CT Phantom

Do you want to know more about the ACR CT Accreditation Extension Plates?

If you want to continue your search for additional information on this product try this link.

← Back to partner

Diagnostic Imaging › QA phantoms

Model 183 – Routine Mammographic QC Kit – Sun Nuclear

The Sun Nuclear (formerly Gammex) 183 Routine Mammographic QC Kit contains all the tools, instructions, and data recording forms needed for a film-screen mammography program that meets MQSA requirements.

The instruments evaluate image quality, compression force, film-screen contact, processor performance and film hypo retention.

Model 183 Routine Mammographic QC Kit features:

- multiple instruments and tools for performing a wide range of tests
- rugged carrying case
- ACR Mammography Accreditation phantom is included
- ACR Mammographic Quality Control Manual included

← Back to partner

Model 182M – Mammographic QC Kit – Sun Nuclear

Quality control provides the necessary assurance that your images contain all the information possible for the delivered dose. Sun Nuclear's (formerly Gammex) 182M Mammographic QC Kit can be used at every type of mammography facility, from small clinics to large medical centers.

Each kit is complete and will provide you with the tools used to perform essential tests.

Model 182M Mammographic QC Kit features:

- image quality
- film/screen contact
- kVp accuracy
- automatic exposure control reproducibility
- timer accuracy
- half value layer
- focal spot size
- output reproducibility and linearity

← Back to partner

Model 179 – Artifact Identification Phantom – Sun Nuclear

Sun Nuclear’s (formerly Gammex) 179 Artifact Identification Phantom is a full field device that allows for a grey film to be produced when the phantom is imaged. This will indicate any artifacts that may be caused by a mammographic system’s grid or filters.

Model 179 Artifact Identification Phantom features:

- acrylic design

Model 118 – Mammographic Aluminum Stepwedge – Sun Nuclear

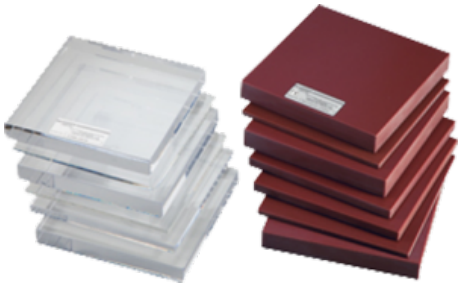
Sun Nuclear's (formerly Gammex) 118 Mammographic Aluminum Stepwedge is constructed from a single piece of High Purity Aluminum. The nine steps have thickness ranging from 0.3 mm to 2.27 mm.

Model 118 Mammographic Aluminum Stepwedge features:

- made of High Purity Aluminum Alloy and Copper
- made from a single piece of High Purity Aluminum
- compact design

← Back to partner

Model 159A / 159A-BR – Mammographic Phototimer Consistency Tool – Sun Nuclear



Sun Nuclear's (formerly Gammex) model 159A and 159A-BR Mammographic Phototimer Consistency Tools are designed to test Automatic Exposure Control (AEC) performance.

Model 159A / Model 159A-BR Mammographic Phototimer Consistency Tool features:

- test tools come in either 7 pieces of acrylic (159A) or 7 pieces of breast tissue equivalent material (159A-BR)
- multiple thicknesses and densities

If you want to continue your search for additional information on mammography accessoires, try this link.

Diagnostic Imaging › QA phantoms

Model 150K – Mammographic DCF Test Tool – Sun Nuclear

Sun Nuclear's (formerly Gammex) Model 150K Mammographic Density Control Function (DCF) test tool enables a quick and accurate assessment of a film-screen mammography unit's Automatic Exposure Control (AEC).

Model 150K Mammographic DCF Test Tool features:

- engraved density scale and sliding exposure plate
- can slide exposure place without moving the cassette
- the tool consists of a base plate with a sliding exposure plate which contains a small window
- design permits sliding the exposure plate without moving the plate
- light weight and convenient to use

Model 429 – Ultrasound Biopsy Phantom – Sun Nuclear

The same eye and hand coordination skills required to perform ultrasound-guided biopsies of other organs can be learned using this phantom from Sun Nuclear (formerly Gammex).

The use of ultrasound-guided needle biopsy to diagnose the form and structure of lesions is growing worldwide.

The Ultrasound Biopsy Phantom simulates the look and feel of a human breast.

Model 429 Ultrasound Biopsy Phantomeatures features:

- 11 test objects on three different levels, allowing you to practice identification, aspiration and biopsy procedures on cysts, high-contrast and low-contrast lesions
- simulates the look and feel of a human breast
- the lesions are:
  - 3 fluid-filled cysts
  - 4 high contrast lestions
  - 4 low contrast lesions
- material in the solid lesions are colored to differentiated them from the surrounding tissue
- designed for multiple uses

If you want to continue your search for additional information on this product try this link.

Model 156D – Stereotactic Mammographic Accreditation Phantom – Sun Nuclear

Sun Nuclear's 156D Stereotactic Mammographic Accreditation Phantom with Gammex technology, is used for monitoring digital mammography systems currently used for stereotactic biopsy and localization.

The 156D is accredited by the ACR.

Model 156D Stereotactic Mammographic Accreditation Phantom features:

- compact size
- wax insert contains 12 sets of test objects
- approximates the size of a 4.2 cm compressed breast of 50% glandular and 50% adipose compostion
- wax insert contains
  - simulated micro-calcifications of Aluminum oxide specks
  - 4 different size nylon fibers to simulate fibrous structures
  - 4 different size lens-shaped masses to simulate tumors
- replaceable wax insert which contains the targets

Do you want to know more about the Stereotactic Mammographic Accreditation Phantom?

If you want to continue your search for additional information on this product try this link.

← Back to partner

Model 157A – Mammographic Film/Screen Contact Test Tool – Sun Nuclear

Today’s mammography film/screen systems from Sun Nuclear (with Gammex technology) have higher resolution than diagnositic radiography x-ray systems and require test tools with finer detail. Regular testing with the Gammex 157A detects problems and artifacts early.

Use of the tool and the evaluation of the resulting images is simple. Areas of poor screen contact appear darker than areas of good contact. Any dark areas greater than 1 cm should be investigated and corrective action taken.

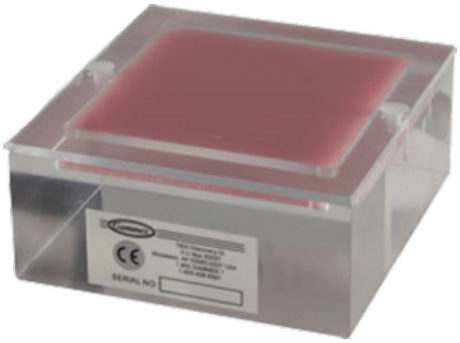
Sun Nuclear recommends testing cassettes every six months or when new or repaired cassettes are put into service.

Model 157A Mammographic Film/Screen Contact Test Tool features:

- screen size of 24 x 30 cm
- mesh size of #40 copper makes the tool ideal for testing new cassettes.
- compact and easy to store

If you want to continue your search for additional information on this product try this link.

Model 156 – Mammographic Accreditation Phantom – Sun Nuclear



Sun Nuclear's (formerly Gammex) Model 156 Mammographic Accreditation Phantom has been #1 phantom listed by the ACR since the start of the MQSA program in 1994. The Gammex 156 provides the physical standard baseline for assuring the quality of the images produced by your mammographic system.

The 156 simulates the x-ray attenuation of a 4.2 cm slab of compressed human breast composed of 50% adipose tissue and 50% glandular tissue. Target objects in the phantom are of known size, shape, and density. These represent the different structures or malignancies found when imaging the breast.

Image quality and system sensitivity is evaluated using these targets and following ACR/MQSA guidelines.

Model 156 Mammographic Accreditation Phantom features:

- the 156 simulates the x-ray attenuation of a 4.2 cm slab of compressed human breast composed of 50% adipose tissue and 50% glandular tissue
- acrylic construction with a replacable wax insert
- test objects composes of nylon fibrils and simulated micro-calcification specs
- provides the test step needed to measure density differences

If you want to continue your search for additional information on this product try this link.

Diagnostic Imaging › QA phantoms

Model 468 – CT Dose Index Phantom – Sun Nuclear

The Model 468 CT Dose Index Phantom from Sun Nuclear (formerly Gammex) has been designed to meet specifications outlined by the Food and Drug Administration (FDA 21CFR 1020.33) and the International Electrotechnical Commission (IEC 60601-2-44). The phantom is offered as a 2-piece or 3-piece nested configuration. Each configuration includes a custom case with nested modules, allowing the user to adapt the phantom to the desired size required by the protocol in use.

CT Dose Index (CTDI) Phantom features:

- easy to use design
- measures absorbed dose and monitor scanner output very fast
- includes a custom hard case for safe storage and easy transportation
- material: polymethyl methacrylate (PMMA/Acrylic)
- adult body 32 cm diameter: 32 cm diameter x 14.5 cm thick
- adult head/pediatric body: 16 cm diameter x 14.5 cm thick
- pediatric head (model 468-BHP only): 10 cm diameter x 14.5 cm thick
- weight: 13.9 kg (30.5 lbs)

If you want to continue your search for additional information on this product try this link.

← Back to Table of Contents

Partner Quart

QUART X-Ray QA Solutions is a German-based provider of quality assurance technologies for diagnostic imaging and radiological applications. Their offerings encompass QA phantoms, dosimetry tools, measurement systems, and analysis software, supporting medical professionals in maintaining high standards of patient safety and imaging accuracy.

Product offering

QUART DVTap DIN 6868-161

QUART IAEA-EFOMP-ESTRO Test Set

Diagnostic Imaging

QUART DVTap DIN 6868-161

QUART DVTap DIN 6868-161

Developed over a period of 2 years in a project involving major dental manufacturers, and released by QUART already in 2007, the DVTap has become a national and international standard solution for CBCT – based on our company’s innovative approach.

The QUART DVTap phantom is designed to be used as a universal tool for 3D imaging equipment including CT applications. The phantom fully complies with DIN 6868-161 for acceptance tests in DVT/CBCT.

In conjunction with a specially developed software (QUART DVTtec), quick and comprehensive CBCT IQ tests can be performed.

Only one exposure is necessary to create a 3D data set containing all required parameters to evaluate CBCT image quality. Automated evaluation is performed with the unique QUART DVTtec software.

The phantom can be used for field sizes from 4x4cm to large fields-of-view (FOV). A universal holder or customized phantom holders are available for easy and reproducible positioning.

Technical specifications

- Spatial resolution: Line spread function
- Resolution: Z-Resolution
- Standard test objects: PMMA / Air / PVC
- Material equivalents : Free Air / Soft tissue / Bone
- Positioning tools: Linear (top side) / Selective markers
- Size: Ø 16 cm, height: 15 cm
- Scatter Radiation modules: 1x 6 cm / 1x 5 cm

Parameters

- Nyquist Frequency (NF)
- Contrast-to-Noise Ratio (CNR)
- Homogeneity / Image Uniformity
- Z-Resolution
- Modulation Transfer Function (MTF)
- Artefacts, Image Flaws
- Figure of Merit / Acceptance Indicator

https://peomedical.com/webinar/quality-control-in-cone-beam-

computed-tomography-cbct-efomp-estro-iaea-protocol/attachment/quart-dvt-kp/

QUART IAEA-EFOMP-ESTRO Test Set

QUART IAEA-EFOMP-ESTRO Test Set

The test set was compiled based on the recommendations of the three organizations, **IAEA, EFOMP, and ESTRO**, for a quick and time-efficient QA performance at CBCT imaging equipment.

These recommendations are principally based on DIN 6868-161 and 6868-15 for CBCT quality assurance.

These recommendations are principally based on DIN 6868-161 and 6868-15 for CBCT quality assurance.

Only one exposure is required to create 3D data set containing all required parameters to evaluate image quality. Automated image quality evaluation is performed through the unique QUART CTtec QA/QC software.

The DVTkp phantom can be applied for field sizes from 4x4cm to large fields-of-view (FOV). Customized holders for a variety of CBCT systems are available.

Technical specifications:

- Spatial resolution: Line spread function
- Standard test objects: PMMA / Air / PVC
- Material equivalents: Free Air / Soft tissue / Bone
- Positioning tools: Linear (top side) / Selective markers
- Size: Ø 16 cm, height: 15 cm

Parameters:

- Nyquist Frequency (NF)
- Contrast
- Noise
- Contrast-to-Noise Ratio (CNR)
- Homogeneity / Image Uniformity
- Spatial Resolution / Modulation Transfer Function (MTF) at 10% & 50% modulation
- Modulation Transfer Function (MTF) as per IEC 62220-1-2
- CT Numbers / Hounsfield Units
- Z-Axis Resolution / NF and MTF in Axial Direction
- Artefacts, Image Flaws, etc.
- System Indicator / Acceptance Indicator (Figure of Merit)

- Patient / Phantom Positioning Accuracy
- Additional QA/QC related tests such as geometry and distance measurements etc. to be conducted in an external DICOM viewer

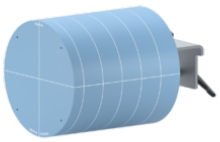
https://www.sciencedirect.com/science/article/abs/pii/S1120179717301837

← Back to Table of Contents

Partner Other

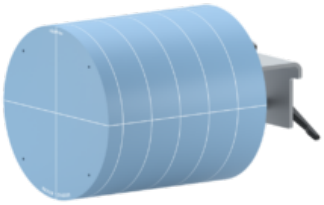
Product offering

IQphan™ Comprehensive CT Image Quality Phantom



IQphan™ Comprehensive CT Image Quality Phantom

- Perform QA across CT imaging systems, from sophisticated diagnostic scanners to cone beam to on-board radiotherapy systems
- Use with RapidCHECK™ Image Quality Analysis software for exacting CT imaging quality testing, with quick, consistent analysis
- Made from true tissue-mimicking HE CT Solid Water®



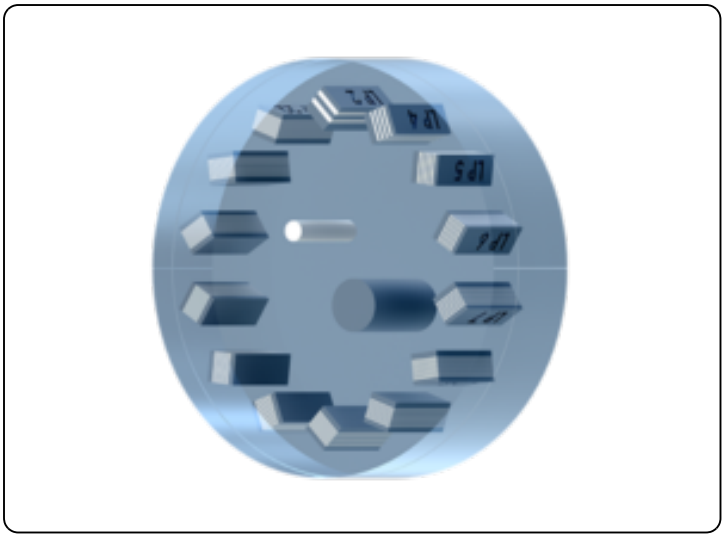
There are a multitude of CT imaging systems, spanning the diagnostic and radiation therapy spaces. This breadth has been a challenge for QA because of the different performance characteristics of these systems. With IQphan, a single phantom addresses QA across the range of specifications of different CT scanners, enabling you to gain more QA information than may be available with other phantoms.

Comprehensive Image Quality Phantom

With IQphan, users can perform QA across CT imaging systems, from sophisticated diagnostic scanners to cone beam to on-board radiotherapy systems. A combination of modules supports a robust variety of tests.

Automated Analysis

Use IQphan with RapidCHECK™ Image Quality Analysis software for exacting CT imaging quality testing, with quick, consistent analysis.

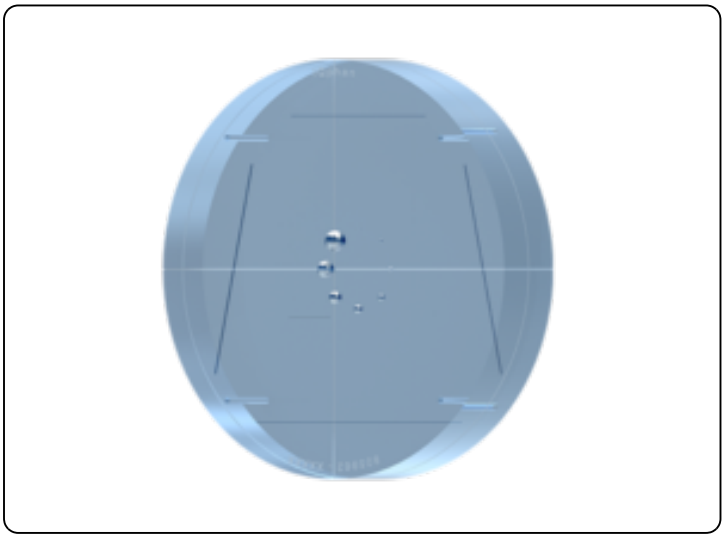


High-Contrast Resolution Module

Designed for manual and automated analysis, this module features high-resolution line pairs, large 3D patterns that are easy to visualize, and robust data analysis in the RapidCHECK software.

- All line pair targets oriented 45° to radial line for a consistent balance between radial and circumferential resolution

- Includes high resolutions up to 22 lp/cm
- Designed for automation: Includes solid samples of resolution materials for accurate results during software analysis[1]
- Zinc high-contrast material provides visibility without over-ranging scanners



Slice Thickness & Geometric Evaluation Module

Multiple wire-ramp materials and diameters enable this module to analyze slice thickness on scanners ranging from diagnostic CT to CBCT and MVCT.

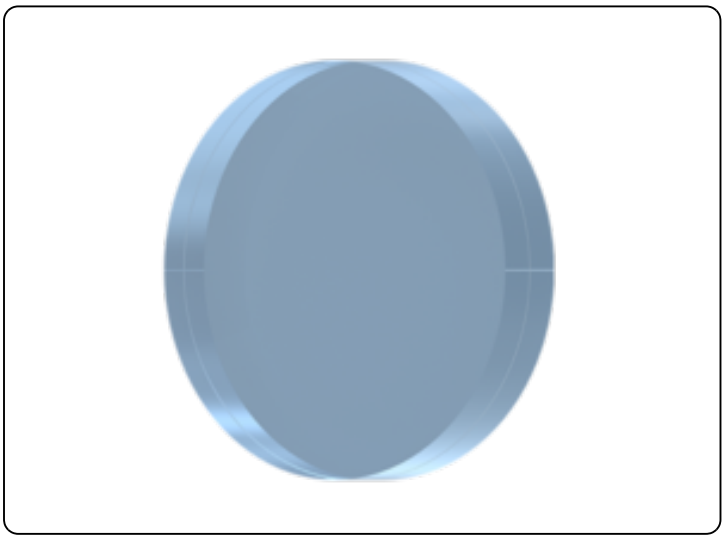
- Measure slice thickness with two opposed pairs of wire ramps, one pair thinner and one pair thicker
- Enables Modulation Transfer Function with one-off vertical wire
- Check geometric accuracy with a set of 8 acrylic spheres
- Perform MTF measurements with BB’s of two different sizes
- Robust across a wide range of CT systems, from diagnostic to RT

Low-Contrast Detectability Module

Finally, a low-contrast test that works for radiation therapy systems as well as diagnostic CT. Challenge your high-end systems with 0.3% and 0.6% contrasts. Test your radiation therapy CT systems with body-like contrasts of 1.0% and 2.0%, in sizes ranging from 2.0 to 25.0 mm.

- Evaluate Low Contrast Detectability at four different contrast levels: 0.3%, 0.6%, 1.0%, and 2.0% (3 HU, 6

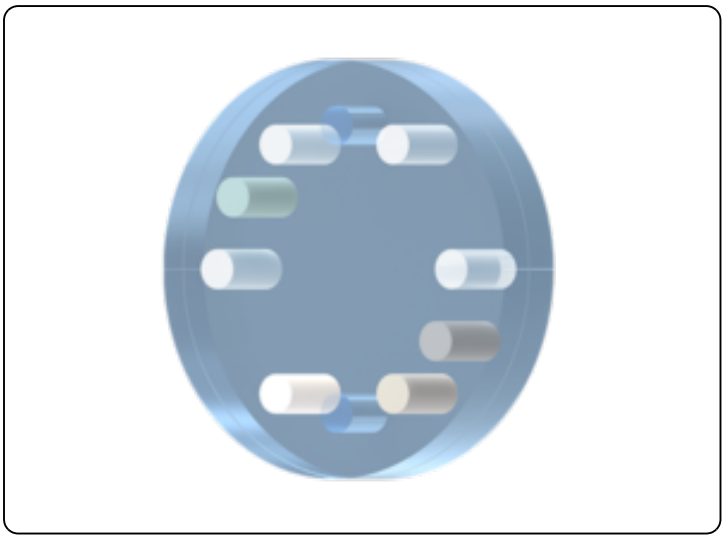
HU, 10 HU, and 20 HU)
- Sizes of each contrast object range from 2 to 25 mm
- Low-Z density-based contrasts
- The four precisely formulated contrast levels use density variations of low-Z materials for consistency across CT energies



Uniformity Module

Assess noise and uniformity in our HE CT Solid Water material.

- Measure uniformity and noise
- Constructed of HE CT Solid Water for unparalleled water equivalency across the energy spectrum



HU Module

Test the consistency of known HU materials and measure the effective energy of the scan.

- 12 material samples
- Materials include Tissue-Mimicking Materials (TMMs) as well as commonly referenced plastics
- Bone is not just dense plastic; TMMs include higher-Z materials that can improve calibrations and effective energy measurements