BERTIN TECHNOLOGIES

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Table of contents

Contamination monitoring **5**

MINITRACE CSDF – Bertin Instruments 6
SaphyRAD E Multiprobe – Bertin Instruments 9
MiniTRACE S5 – Saphymo 10
SaphyRAD MS Dom-420 – Bertin Instruments 11

Analysis software **12**

Dataexpert Software Solution – Saphymo 13

Doorway & environmental monitoring **14**

AlphaGUARD-Radon Monitor – Bertin Instruments 15
SpectroTRACER Environmental Radiation Monitor – Saphymo 18
AlphaE – Bertin Instruments 19
SkyLINK Wide-Range Environmental Radiation Monitoring Network – Bertin/ Saphymo 20
ShortLINK Short-Range Environmental Radiation Monitoring Network – Bertin/ Saphymo 21
GammaTRACER Spider Autonomous Gamma Monitor for Emergencies – Saphymo 22
GammaTRACER Autonomous Radiation Monitoring Probe – Saphymo 23

Dose rate monitoring **26**

Skydose Dosimetry System – Bertin Instruments 27
RadTRACE – Bertin Instruments 29
MiniTRACE S5 – Saphymo 30

Alpha, beta & gamma spectrometry **31**

SpectroTRACER Environmental Radiation Monitor – Saphymo 32

QA phantoms **33**

Model 551 Accreditation Phantom for Uniformity – CIRS 34
Model 057A Triple Modality 3D Abdominal Phantom – CIRS 35
Model 040GSE Multi-Purpose, Multi-Tissue Ultrasound Phantom – CIRS 36
Models 014A, 014AD, 014B, 014F Mammography Phototimer Consistency Testing Slabs – CIRS 38
Model 020 BR3D Breast Imaging Phantom – CIRS 39

Software **40**

Dataexpert Software Solution – Saphymo 41

Samplers / counters **42**

Coriolis Consumables – Bertin Instruments 43
Coriolis RECON – Bertin Instruments 44
Coriolis Micro – Bertin Instruments 45

Training phantoms **46**

Model 057A Triple Modality 3D Abdominal Phantom – CIRS 47
Model 053S, 053L and 053L-EF Ultrasound Prostate Training Phantom – CIRS 48

Model 053-I Ultrasound Prostate Training Phantom – CIRS 50
Model 600 3D Sectional Torso Phantom – CIRS 51

QA Phantoms **52**

Model 700-QA CT Imaging QA Kit for Atom & CT Dose Phantoms – CIRS 53
Model 061 Helical CT Phantom – CIRS 54
Model 610 AAPM CT Performance Phantom – CIRS 55
Model 600 3D Sectional Torso Phantom – CIRS 56
Model 026 DEXA Phantom – CIRS 57
Model 062MQA CBCT Electron Density & Image Quality Phantom – CIRS 58
Models 090, 091 & 092 MicroMouse & Water Filled Mouse Phantoms – CIRS 59
Models 18023 & 18043 Xsight Lung tracking Phantom Kit & 4D Planning Phantom – CIRS 60
Model 007TE Tissue Equivalent CT Dose Phantoms – CIRS 61
Model 004 CT Simulator for Bone Mineral Analysis – CIRS 62

QA Measurement systems **63**

ZEUS: MRGRT MOTION MANAGEMENT QA PHANTOM (Model 008Z) – CIRS 64

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.

Bertin Technologies' handheld monitors and personal electronic dosimeters provide real-time radiation assessment, prioritizing safety for medical professionals in clinical and diagnostic settings. Their advanced environmental monitoring systems enable continuous surveillance of radiological levels in medical facilities, ensuring compliance with health regulations and early detection of potential hazards.

In the field of medical waste management, Bertin's solutions facilitate the detection and control of radioactive materials, supporting safe handling and sustainable disposal practices.

By combining cutting-edge technology with user-focused design, Bertin Technologies empowers healthcare providers with reliable tools to enhance safety protocols and support critical decision-making in radiation protection.

Optimize your medical radiation safety and compliance with Bertin Technologies' innovative solutions!

CONTAMINATION MONITORING

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MINITRACE CSDF – Bertin Instruments

MiniTRACE CSDF is a unique multipurpose meter for contamination control, survey, dose rate and XRays radiation measurement.

The MiniTRACE CSDF is a multipurpose instrument fulfilling the functions of a contamination, survey and dose rate meter. It is designed to improve the detection and the quantification of radiation contamination, making this a frontline tool in the protection against uncontrolled distribution of radioactive material. MiniTRACE CSDF provides several functions and measurement modes such as the dose rate, the activity or the count rate.

With the activity and surface contamination modes, different nuclides can be selected from the inbuilt library. The surface contamination mode is calibrated according to ISO 7503-1. Combined with the right accessories, wipe tests (surface contamination) and food tests (food contamination) can be performed. A mean value mode and a count up mode are provided to increase instrument accuracy.

Datasheet

Radiation type
• Alpha, beta and gamma

Detector type
• Geiger-Mueller pancake, active counter area 15.5 cm², active diameter 44.5 mm, window 2.0 mg/cm², energy compensated

Display unit
• µSv/h, cps, Bq, Bq/cm² and Bq/L

Measurement range
• Dose rate: up to 5,000 µSv/h (100 mR/h)
• Pulses: up to 10,000 cps (300,000 cpm)
• Activity (depends on the radionuclide): up to 100 000 Bq (999,000 dpm)
• Surface contamination (depends on the radionuclide): up to 5,000 Bq/cm2 (30,000 dm/cm2)
• Food: up to 100,000 Bq/l (1,000,000 pCi/l)

Gamma sensitivity
• 4.3 cps/µSv/h

Energy Range

• 26 keV to 1.25 MeV, lid has to be closed

Sensitivity
• Co60: 0.41 cps/Bq/cm²; C14: 1.65 cps/Bq/ cm²; Sr90+: 10.65 cps/Bq/ cm²; Am-14:4.19 cps/Bq/ cm²; Cl36: 9.57 cps/Bq/ cm²; Cs137: 11.15 cps/Bq/ cm² ; U238: 4.19 cps/Bq/ cm²; I131: 9.71 cps/Bq/ cm²

Display
• 6-digit LCD display, plus 5-digit alpha numeric display for alarm- and status messages

Grid
• 0.8 stainless steel, 80% transparency, easily removable

Integration time
• Automatic, with count up mode adjustable

Energy supply
• 2 Mignon batteries (type: LR6, AA, MN 1500) 1.5V

Battery autonomy
• Up to 2,000 h

Built-in sensors
• IR-interface for software communication

Benefits

Easy and fast monitoring
• MiniTRACE CSDF is easy to use (2 buttons interface) and provides a very fast response time (1sec.). It can also be set up with the optional DataVIEW software.

All-in-one survey meter
• MiniTRACE CSDF allows multipurpose measurements for dose rate H*(10) (µSv/h), count rate (cps), activity (Bq), surface contamination (Bq/cm²) and food contamination (Bq/L). Radionuclide can also be selected.

Designed for harsh environments

• MiniTRACE CSDF is compact and robust with its strong housing protected with a rubber boot. It is suitable for long time operations (battery lifetime: 2,000 h).

Technologies

MiniTRACE CSDF is a unique multipurpose meter for contamination, survey, dose rate, XRays, food and wipe test measurements. It is equipped with a 15.55 cm^2 Geiger-Mueller pancake detector and a 0.8 mm stainless steel grid. In addition to the verification of contamination, it is ideally suited to measuring the environmental dose rate equivalent (H*(10)).

MiniTRACE CSDF displays values in cps, µSv/h, Bq, Bq/cm^2 and Bq/L. For the Bq and Bq/cm^2 modes, the user can select different nuclides with built in nuclide specific calibration library (Cs137, Am241, I131, Sr90, U238, C14, Cl36, Co60).

The Bq/cm^2 mode (for surface contamination) is calibrated according to ISO 7503-1. MiniTRACE CSDF offers a special mode for food measurement: it measures the activity level found in the liquid or smashed food, with a state-of-the-art food measuring kit.

Accessories

• Protective rubber cover (included)
• Communication kit (incl. DataVIEW software and IR transceiver)
• Transparent plastic protection

• Belt pouch
• Suitcase (Pelicase)
• Wipe test kit

• Food measuring kit
• Emergency case
• Pressure-tight container for air transport

SaphyRAD E Multiprobe – Bertin Instruments

SaphyRAD multiprobe alpha & beta contamination meter has been developed to meet all needs of contamination control for multiple markets such as the nuclear and NORM industries, medical structures & first responders, thanks to its integrated nuclide library. Its ergonomic interface and design have been especially conceived for use even by non-specialists.

SaphyRAD’s wide range of contamination probes combined with its specific algorithm allow for a very fast and reactive detection. Depending on the probe, the operator can either assess small or large areas to detect alpha, beta/gamma or alpha & beta/gamma radioactive contamination. All data can be stored on an SD card for measurement recordings.

SaphyRAD E advantages

- user friendly embedded alarm & distance control indicator
- wide range of compatible probes
- adaptative nuclide library
- versatile for contamination & measurement operations
- ruggedized for harsh environment

SaphyRAD E

MiniTRACE S5 – Saphymo

The MiniTRACE S5 is a contamination meter designed to improve the safety of workers in all different kinds of fields. It's very sensitive and responds within a second.

Because the device is very user-friendly, it's very easy to detect possible spots of contamination in the controlling areas. The 6-digit display shows the activity value with a fixed decimal point.

The MiniTRACE has four pre-programmed alarm tresholds, but users can also adjust these to their personal needs.

This contamination meter is not only easy to use, but it's also very fast. If the device detects something, it will respond within a second. The device is applicable to many fields, like nuclear power plants, research centers, hospitals, police, fire brigades and the army.

BENEFITS OF THE MINITRACE S5

- High sensitivity
- Fast response time
- Compact and robust
- Ergonomic design
- Easy two-button operation
- 4 alarm tresholds
- Visual and audible alarm output
- Infrared interface
- X-ray sensitivity of >5 keV

If you want to read more about dose rate meters from Bertin, visit their website!

If you are in doubt about what MiniTRACE suits you best...

Read this!

SaphyRAD MS Dom-420 – Bertin Instruments

SaphyRAD MS is the latest multiprobe survey meter designed for operation in harsh environments such as military fields and first responders.

Together with the probes, SaphyRAD MS allows to cover most of the needs of first responders.
SaphyRAD MS associates a wide range dose rate meter and external smart probes for source and hot spot search and contamination measurement.
SaphyRAD MS includes a simulation mode which allows to train the users with high reality without the use of radioactive sources. Special care has been taken in the design of man machine interface for quick use by non radiation specialists.

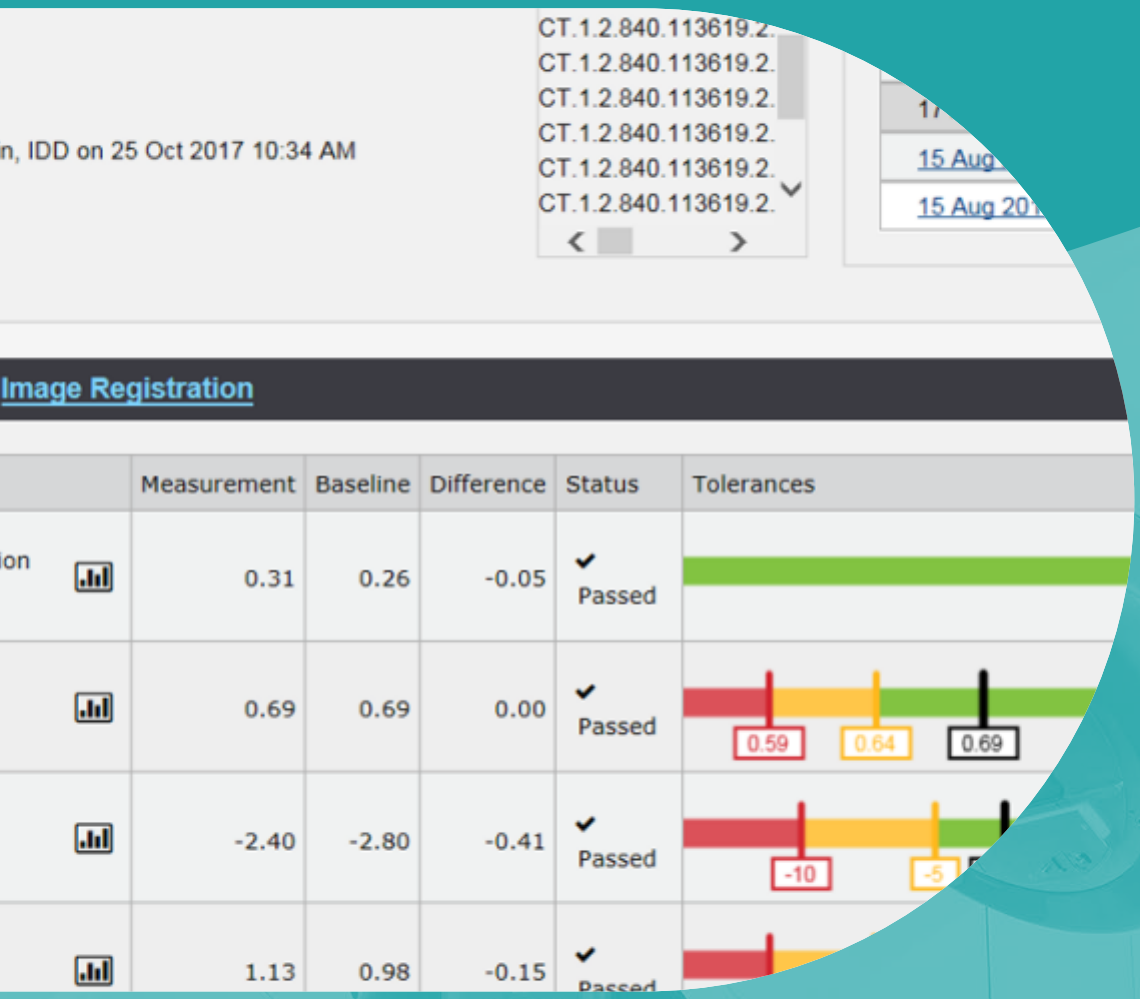
SaphyRAD MS features

- designed for operation in harsh environments
- high resolution and large color LCD display
- built in simulation function for training
- designed for use with CBRN protective clothing
- built in GPS
- specific algorithm for very fast and reactive detection
- wide dose rate range 0.05 µGy/h to 10Gy/h
- comprehensive external smart probes for source search and multiple contamination measurement specially designed for use by non radiation specialists

SaphyRAD MS
SaphyRAD MS probes

Contact our PEO product specialist.

ANALYSIS SOFTWARE



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Dataexpert Software Solution – Saphymo

DataEXPERT software is a solution you can use to collect, manage, chart and evaluate data measured by sensors from Bertin Instruments for example. DataEXPERT is a very user-friendly solution that offers a powerful web-based interface available, not only on computers and laptops, but also for mobile use on tablets and smartphones.

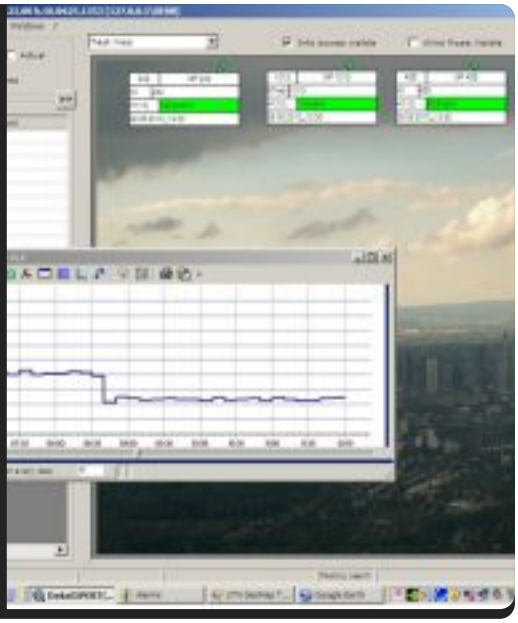
The software shows the data in charts or tables, and with static or dynamic GIS map layers, so the data is easy to analyse. DataEXPERT eases the system management because it shows all technical and radiological events of the connected probes. The users have access to the system overview, and they can also adjust all instruments parameters with remote setup functions.

You can combine this software perfectly with Bertin's GammaTRACER probes for example.

DATAEXPERT SOFTWARE BENEFITS

- Can also import and display data from DVD-files (older data can be imported)
- Select data from different tools or measurement series in the database and display it
- Use alarm, zoom, display, mathematics and report functions
- Easily exportable data to Excel or SQL databases
- Use a display module like GEOMAP or Google Earth
- User friendly
- Compatible with Windows

Do you want to read more about the possibilities, visit our partner's website!



DOORWAY & ENVIRONMENTAL MONITORING

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AlphaGUARD-Radon Monitor – Bertin Instruments

AlphaGUARD is a portable, battery or net-operated radon monitor with high storage capacity. In addition to the radon concentration in air, AlphaGUARD measures and records also simultaneously ambient temperature, relative humidity and atmospheric pressure with integrated sensors.

Thanks to its high sensitivity and long time stable calibration, it is the reference instrument for professional radon monitoring and accurate measurement on site.

The complete product line provides all accessories for radon in air, water, soil, building materials, progeny, thoron and calibration equipment to perform air, water, soil, exhalation measurements. The collected data can be linked to the DataVIEW software, allowing data download and storage as well as professional data analysis and reporting. With AlphaGUARD, bring your Radon Lab everywhere.

AlphaGUARD - Your Radon lab everywhere
https://youtu.be/oJaaYf9-PbI

SCAN TO VIEW VIDEO

FEATURES

- 0.62 L pulsed ionization chamber
- Measuring range of 2 to 2,000,000 Bq/m³,
- Instrument calibrator error of 3%
- Storage capacity of up to 60,000 measurement points
- Storage of:
  - 400 days at 10 min measuring cycle
  - 2,500 days at 60 min measuring cycle
- Battery life of 10 days (40 days with external battery)
- 329 mm x 355 mm x 123 mm and weighs 6,2 kg (13,7 lbs)

BENEFITS

AlphaGUARD is suitable as a reference device and offers the following features:

- Quality at the highest level
- Long-term stable calibration factor (guaranteed 5 years)
- Calibration traceable to different national standards (PTB, NIST, NPL)

- Inbuilt quality assurance system for permanent validation of system operation and data
- Fast transient response
- Automatic background correction
- No sensitivity to high air humidity





Technology

AlphaGUARD incorporates a pulse-counting ionization chamber (alpha spectroscopy).

Based on optimal chamber geometry and intelligent signal evaluation, this radon monitor is suitable for continuous monitoring of radon concentrations between 2 – 2 000 000 Bq/m³.

The DSP (Digital Signal Processing) technology provides highly effective differentiation ability between “real” radon data and all kinds of artefacts.

Your Radon Lab everywhere

- AquaKIT
- Soil gas Probe
- AlphaPM
- AlphaPUMP / LabPUMP
- Emanation / Calibration Container
- Exhalation Box
- On line Radon in water monitoring

- Valve Selector
- DataVIEW PRO software

REASONS TO CHOOSE ALPHAGUARD – RADON MONITOR

- Reference instrument with high sensitivity
- Calibration stability guaranteed for 5 years
- High performance for versatile applications
- Maintenance-free operation

For more information about the Alphaguard, take a look at our partner's website, or read this PEO article!

SpectroTRACER Environmental Radiation Monitor – Saphymo

SpectroTRACER is a continuous environmental radiation monitor for spectroscopy to measure very low gamma contamination (water: SpectroTRACER AQUA).

The SpectroTRACER produces a spectroscopic analysis of the detected nuclides identification. The SpectroTRACER is used for the measurement of radioactivity when a standard gamma dose rate monitor is not efficient enough and when it is necessary to discover the nature of the gamma radiation.

SpectroTRACER Environmental Monitor features:

- working temperature: -20 ° C to + 50 ° C. / option: -30 ° C to + 60 ° C
- max. 100 meters under water (SpectroTRACER -AQUA)
- IP68 certified
- relative humidity: 100%
- integrated sensors for temperature and humidity

AlphaE – Bertin Instruments

AlphaE is an electronic handheld device for fast and time-resolved radon monitoring in buildings, outdoors and mines. Typically, 80 % of the final result is achieved after 2 hours (faster response for higher values). Due to its ultra-lightweight design and sophisticated features, AlphaE is highly suitable also for surveying the personal radon exposure and dose at workplaces.

The AlphaE’s favourable price-performance ratio makes it also interesting for service companies engaged in radon assessment and mitigation as well as for users in private homes.
Up to 6 months battery life allows long-term measurement without mains power. Permanent operations via mains supply are possible via USB port.

Advantages AlphaE

- ultra-lightweight design
- sophisticated features
- wide measuring range for professional use
- up to 6 months autonomy
- suitable software included

Download the datasheet or contact our product specialist.

SkyLINK Wide-Range Environmental Radiation Monitoring Network – Bertin/ Saphymo

The SkyLINK Wireless Communication System is a wide-range, fully autonomous and private wireless network. You can use this system to transmit online data from connected low-power sensors or instruments to a central station. Unlike public cellular communication system standards (like GSM), this system is not dependant on the existence of an area covering cellular infrastructure. The system generally includes a radiological network like GammaTRACER probes and the DataExpert supervision software.

For more information about Bertin Data Transmission systems, take a look at our partner's website!

The system structure allows its use in every situations, even in the most accidental ones (private wireless communication network and easy-to-install autonomous probes).

SKYLINK WIRELESS COMMUNICATION SYSTEM FEATURES

- Very low power consumption
- Operating distance up to 100 km (60 mi)
- Private network, so no regular transmission fees
- Easy interface to external instruments or host processors
- Turnkey system installation
- Long-term maintenance-free operation

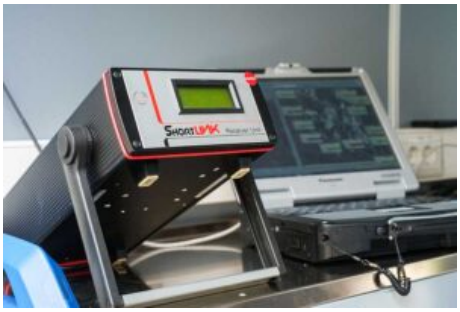
https://youtu.be/59D0HZs64zw

SCAN TO VIEW VIDEO

ShortLINK Short-Range Environmental Radiation Monitoring Network – Bertin/ Saphymo

The ShortLINK Wireless Communication System is a short-range, fully autonomous and private wireless network. You can use this system to transmit online data from connected low-power sensors or instruments to a central station. Unlike public cellular communication system standards (like GSM), this system is not dependant on the existence of an area covering cellular infrastructure. ShortLINK is generally installed in combination with a radiological network, like GammaTRACER and DataExpert supervision software.

If you want to know more about Bertin data transmission systems, take a look at our partner's website!



SHORTLINK WIRELESS COMMUNICATION SYSTEM FEATURES AND BENEFITS

- Very low power consumption
- Operating distance up to 5 km (3 mi)
- Turnkey installation
- Long-term maintenance-free operation
- Can withstand temperatures from -40°C to 60°C (-40°F to 140°F)

GammaTRACER Spider Autonomous Gamma Monitor for Emergencies – Saphymo

The GammaTRACER Spider Autonomous Gamma Monitor (Saphymo) has been designed to cover the needs of first responders in an emergency scenario. Based on the proven GammaTRACER design, the probe provides reliably the measurement of the gamma dose rate and wireless data transmission to the crisis center by means of SkyLINK radio or Iridium satellite modem.

GammaTRACER Spider Autonomous Gamma Monitor for Emergencies features:

- built-in battery for up to 5 years operation
- innovative self-erecting design, very fast deployment
- ultra compact design
- emergency proof communication options
- SkyLINK radio modem (up to 100 km/60 mi)
- satellite modem (Iridium)
- hermetically sealed weatherproof housing
- wide measurement range: 20 nSv/h up to 10 Sv/h
- can be used to quickly enhance density of existing monitoring networks

GammaTRACER Spider demo

GammaTRACER Autonomous Radiation Monitoring Probe – Saphymo

The GammaTracer Autonomous Radiation Monitoring Probe from Bertin is designed to continuously measure, record, and transmit the environmental gamma dose rate. The probes continuously measure the gamma radiation dose.

Worldwide, there are more than 4.000 GammaTRACERs in operation.

The probes also offer a new dimension in wireless data collection. This is possible because the probes are equipped with a radio module, so you can use them with SkyLINK and ShortLINK for wireless data collection. GammaTRACER can store up to 12.800 data sets, depending on the probe type and measurement cycle.

The probe is available in four types: Basic, Wide, High and XL2.

UNLIMITED AUTONOMY

The GammaTRACER is an autonomous radiation monitoring probe. The monitor's batteries allow maintenance-free, non-stop operation for up to five years, and with an extended battery pack, it will even last up to ten years! This is possible because of the energy-saving chip technology.

But, if you choose the internal solar panel, the autonomy can be unlimited!

They can also resist extreme climatic and environmental conditions because the probes are independent of any physical connections.

GAMMATRACER TYPES

GammaTRACER covers a broad range of radiation monitoring applications because there are multiple types available. The probes are deployable for multiple applications, for example nationwide monitoring, perimeter monitoring, and monitoring for nuclear facilities. The probes are not only suitable for routine, but also for emergency applications.

BASIC

The GammaTRACER Basic has a dose rate measurement range of 20 nSv/h to 10 mSv/h and an energy range of 45keV to 3MeV.

WIDE

The GammaTRACER Wide has a dose rate measurement range of 20 nSv/h to 10 Sv/h and just like the BASIC, also an energy range of 45 keV to 3 MeV.

HIGH

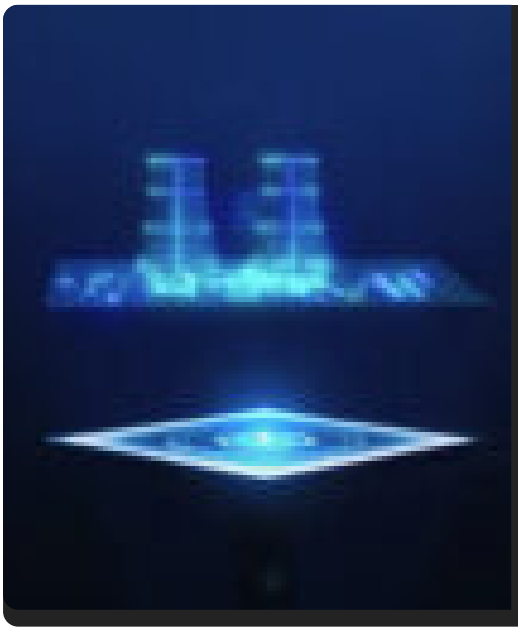
The GammaTRACER High has a dose rate measurement range of 1 mSv/h to 10 Sv/h and an energy range of 80 keV to 4,4 MeV.

XL2

The GammaTRACER XL2 has a dose rate measurement range of 10 nSv/h to 10 Sv/h and an energy range of 45 keV to 2 MeV. The XL2 type also has fast a response mode of 1 second.

ADDITIONAL OPTIONS

Even though the four GammaTRACE options already have a lot of features, there are also options you can choose from. All types can operate in temperatures ranging from -20°C (-4°F) to 50°C (122°F), but you can also choose for the option of -40°C (-40°F) to 60°C (140°F). Furthermore, you can choose additional sensors (rain, wind and weather), power supply by solar panels or a seismic qualified version.



BENEFITS & FEATURES

- Measures x-radiation and gamma radiation
- Measurement cycle, adjustable from 1 second to 120 minutes
- Battery lifetime up to ten years or even unlimited with solar panels
- Can store up to 12.800 data sets
- Type apporval in several countries
- Maintanance-free
- Non-stop operation
- Easy to install

If you want to read more about GammaTRACER, take a look at our partner's website!

https://youtu.be/59D0HZs64zw

SCAN TO VIEW VIDEO

If you have any questions…

Contact PEO!

DOSE RATE MONITORING

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Skydose Dosimetry System – Bertin Instruments

Skydose is an operational dosimetry system, designed to measure & monitor, in real time, the ambient dose level received by response teams in high exposure areas.

The operational dosimetry system Skydose consists in eight Saphydose γi RT teledosimeters, one Personal Digital Assistant (PDA), one Easydose configuration software, one Saphyr portable reader, as well as one to three RT-ZB05 routers.

The Skydose system is part of an ongoing approach based on the reduction of both collective and individual doses, in compliance with the ALARA principle (As Low As Reasonably Achievable). By optimizing the exposition to ionizing radiation, it aims at improving the operators' conditions of intervention, who will thus be able to focus safely on the objectives of their mission.The Skydose system only takes a **few minutes to install**. Thanks to the PDA, it ensures the in-field monitoring of an eight-person team equipped with Saphydose γi RT teledosimeters using mesh networking.
Flexible & robust, the Skydose system can reliably cover an entire infrastructure (a nuclear power plant, for example), thanks to one or more RT-ZB05 dedicated routers.
Fast & easy to deploy, the Skydose system can be used by operators, first-responders & non-specialists, inside & outside the risk areas.

Features

- easy and quick setting even by non-specialized staff
- automatic network synchronization
- suitable for indoor and outdoor use including reactor buildings
- suitable for emergency situations (sturdy – high dose and dose rate range)
- real-time hotspots detection to reduce the mission dose received by workers
- compliant with use in nuclear facilities (CEI 61526)
- low maintenance costs
- real-time, remote & simultaneous monitoring of the Saphydose γi RT dosimeters, for the team to react immediately in case of emergency
- the Skydose system can be installed and configured in a few minutes, and be safely stored in a ruggedized pelicase – several systems can operate simultaneously, without interference

Specifications

- detector: 2 energy-compensated silicon diodes
- energy range: **from 50 keV. to 7 MeV!**

- dose rate measurement range: 0.5 µSv. to 9,999.99 mSv
- dose measurement range: 1 µSv. to 9,999.99 mSv
- alarms: sound & visual
- battery lifetime in operation: 4,000 hours
- radio range: 300 m

RadTRACE – Bertin Instruments

RadTRACE is a gamma survey meter dedicated to workers and non-specialized staff subject to radiation exposure in professional applications.

RadTRACE is a reliable dose rate meter designed to improve the safety of workers exposed to radiation. Robust, compact and easy to use, this instrument allows the measurement of gamma dose and dose rate on a wide range, with a very fast response time (1 sec.).

The data are automatically displayed on an LCD backlit interface with an auto scale function switching between µSv/h and mSv/h for more accuracy. Initially designed for the French nuclear industry, it also offers a vibration alarm and an internal memory for measurement results. The internal data storage allows users to record the dose and dose rate for later readout (interval free adjustable).

Advantages

- high sensitivity
- fast response time (1 sec)
- light, robust and pocket design
- easy to use
- long battery lifetime: 1,000 h

RadTRACE

MiniTRACE S5 – Saphymo

The MiniTRACE S5 is a contamination meter designed to improve the safety of workers in all different kinds of fields. It's very sensitive and responds within a second.

Because the device is very user-friendly, it's very easy to detect possible spots of contamination in the controlling areas. The 6-digit display shows the activity value with a fixed decimal point.

The MiniTRACE has four pre-programmed alarm tresholds, but users can also adjust these to their personal needs.

This contamination meter is not only easy to use, but it's also very fast. If the device detects something, it will respond within a second. The device is applicable to many fields, like nuclear power plants, research centers, hospitals, police, fire brigades and the army.

BENEFITS OF THE MINITRACE S5

- High sensitivity
- Fast response time
- Compact and robust
- Ergonomic design
- Easy two-button operation
- 4 alarm tresholds
- Visual and audible alarm output
- Infrared interface
- X-ray sensitivity of >5 keV

If you want to read more about dose rate meters from Bertin, visit their website!

If you are in doubt about what MiniTRACE suits you best...

Read this!

ALPHA, BETA & GAMMA SPECTROMETRY

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SpectroTRACER Environmental Radiation Monitor – Saphymo

SpectroTRACER is a continuous environmental radiation monitor for spectroscopy to measure very low gamma contamination (water: SpectroTRACER AQUA).

The SpectroTRACER produces a spectroscopic analysis of the detected nuclides identification. The SpectroTRACER is used for the measurement of radioactivity when a standard gamma dose rate monitor is not efficient enough and when it is necessary to discover the nature of the gamma radiation.

SpectroTRACER Environmental Monitor features:

- working temperature: -20 ° C to + 50 ° C. / option: -30 ° C to + 60 ° C
- max. 100 meters under water (SpectroTRACER -AQUA)
- IP68 certified
- relative humidity: 100%
- integrated sensors for temperature and humidity

QA PHANTOMS

peo MEDICAL

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.

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!

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

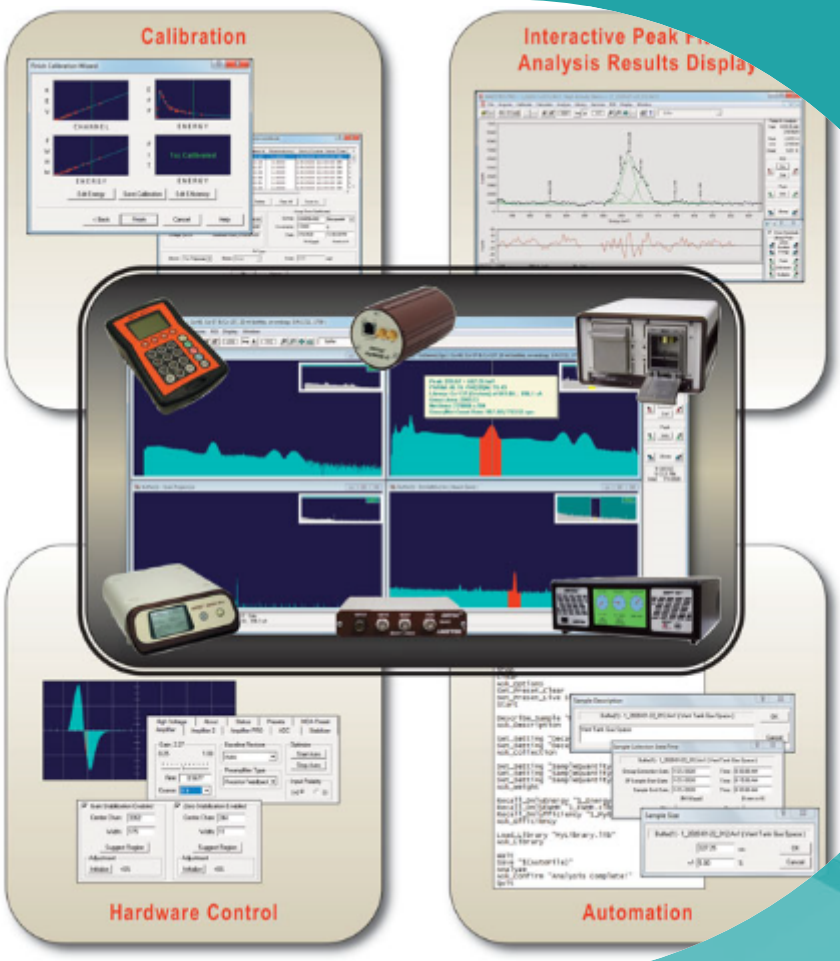
The Model 020 BR3D Breast Imaging Phantom has been designed to assess discoverability of different size lesions within a tissue equivalent, heterogeneous, complex background. This phantom delivers more realistic challenges for standard screen and FFDM mammography systems as well as Breast Computed Tomography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

SOFTWARE



peo MEDICAL

Dataexpert Software Solution – Saphymo

DataEXPERT software is a solution you can use to collect, manage, chart and evaluate data measured by sensors from Bertin Instruments for example. DataEXPERT is a very user-friendly solution that offers a powerful web-based interface available, not only on computers and laptops, but also for mobile use on tablets and smartphones.

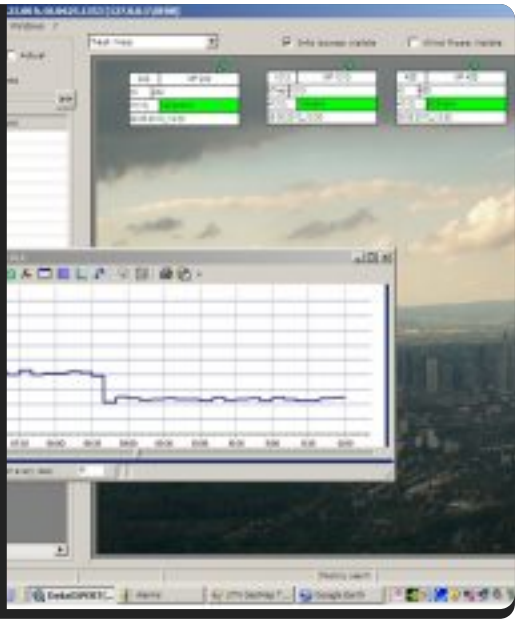
The software shows the data in charts or tables, and with static or dynamic GIS map layers, so the data is easy to analyse. DataEXPERT eases the system management because it shows all technical and radiological events of the connected probes. The users have access to the system overview, and they can also adjust all instruments parameters with remote setup functions.

You can combine this software perfectly with Bertin's GammaTRACER probes for example.

DATAEXPERT SOFTWARE BENEFITS

- Can also import and display data from DVD-files (older data can be imported)
- Select data from different tools or measurement series in the database and display it
- Use alarm, zoom, display, mathematics and report functions
- Easily exportable data to Excel or SQL databases
- Use a display module like GEOMAP or Google Earth
- User friendly
- Compatible with Windows

Do you want to read more about the possibilities, visit our partner's website!

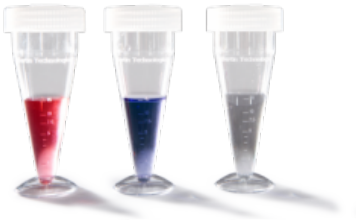


SAMPLERS / COUNTERS

peo MEDICAL

Coriolis Consumables – Bertin Instruments

Coriolis consumables are part of the cyclonic technology: the separation of the airborne particles from the air flow is due to the air flow rate, the air intake geometry, the design of the cones and the collection liquid (surfactant in low concentration).



Introduction video

Consumables

- cones & caps : The cones and caps are designed specifically for the use with the Coriolis µ
- collection liquid doses
- LTM consumables : collection liquid in bottle and tubing kit
- air intake : depending of your research you can adapt the air intake
- standard air intake : air take compatible with all Coriolis for classical samplin
- LTM air intake : dedicated to long time monitoring collection (only compatible with the LTM platform)
- 25 mm connection LTM : designed to propose a hose attachment (testing chamber, confined space ...)

Advantages Coriolis consumables

- dedicated cones to perform high efficiency collection
- adaptor to connect to any 25 mm diameter connector
- easy set up with calibrated 15 ml collection liquid dose
- liquid collection compatible with any downstream experiment
- cones available sterile and non-sterile

Please contact our product specialist.

Coriolis RECON – Bertin Instruments

The Coriolis RECON is a portable, light and ruggedized bio-air sampler for biological warfare agents detection, dedicated to CBRN teams or first responders, with quick deployment in case of an event with biological attack suspicion. The Coriolis RECON have been designed to collect large concentrations of aerosols in the breathable range of 0.5 to 10 µm with an air flow rate at 600L/min, thus being more representative of the environment than traditional bio-aerosol samplers.
Thanks to its ability to collect bio-aerosol particles into liquid format, this system can be used with rapid identification techniques for biological agents (immunoassay, PCR, etc.) to provide an early warning of aerosolized biological warfare agents.

Introduction video

Advantages Coriolis RECON

- the most efficient concentration of biological warfare agent
- high air flow rate
- compatible with any downstream experiments for rapid identification
- bio surveillance with long time monitoring – up to 6 hours
- quick deployment in a military / first responder context

Download the datasheet or contact our product specialist.

Coriolis Micro – Bertin Instruments

Coriolis µ is an innovative biological air sampler for bio-contamination assessment, mainly dedicated to air quality control and air quality monitoring in environmental and pollution research, pharmaceutical, food and veterinary industries, biomedical and health environment...
Based on a cyclonic technology, combined to a high air flow rate, Coriolis µ offers the most efficient particles collection in 10 minutes. The biological particles such as toxins, virus, bacteria, molds, pollens, spores are collected and concentrated in a liquid ready to be analyzed with microbiological and cellular and molecular biology methods.

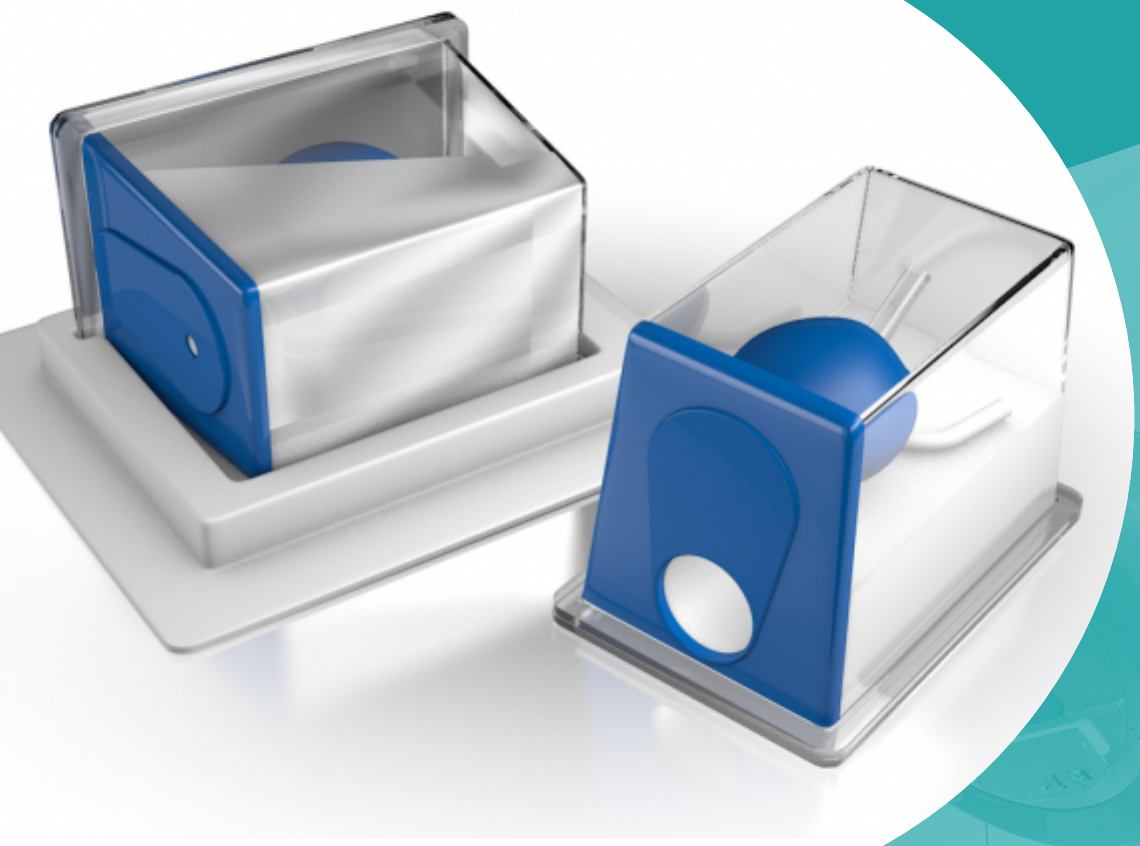
Introduction video

Advantages Coriolis Micro

- the most efficient concentration of biological particles
- high air flow rate & long time monitoring option – up to 6 hours
- compatible with any downstream experiments – divisible samples for several analysis in parallel
- flexible liquid sample output
- no saturation of the collection media for charged environment

Download the datasheet or contact our product specialist.

TRAINING PHANTOMS



peo MEDICAL

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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

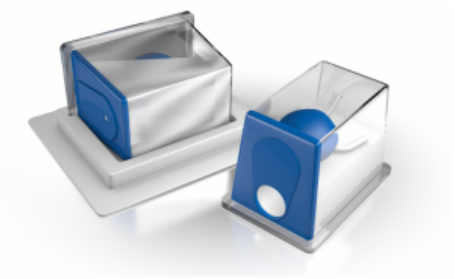
Contact our product specialist or download the datasheet.

Model 053S, 053L and 053L-EF Ultrasound Prostate Training Phantom – CIRS

CIRS designed the Ultrasound Prostate Training Phantom as a multi-modality disposable phantom developed for practicing procedures that involve scanning the prostate with a rectal probe. There are three different models: Model 053S, 053L and 053L-EF.

The clear, acrylic container contains the prostate along with structures simulating the rectal wall, seminal vesicles and urethra. A 3 mm simulated perineal membrane enables various probes and surgical tools to be inserted into the prostate.

This phantom is an ideal training device for ultrasound guided cryosurgery, radioactive seed implantation, and needle biopsy.



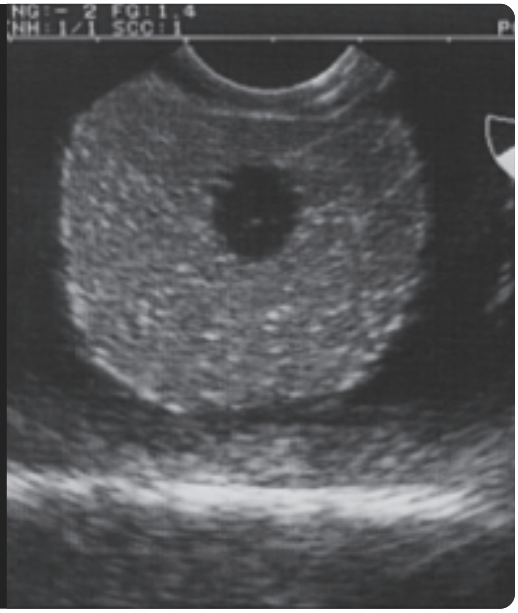
OPTIONS

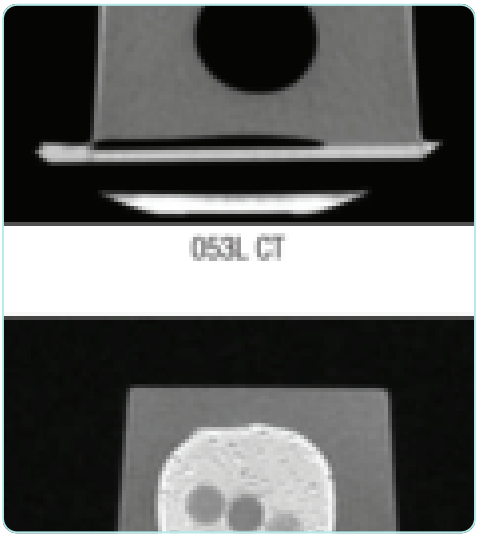
The phantom is available in three ways. The phantom is available with lesions (053L), without lesions (053S) and you can order either the standard side-fire configuration or an alternate geometry optimised for end-fire probes (053L-EF).

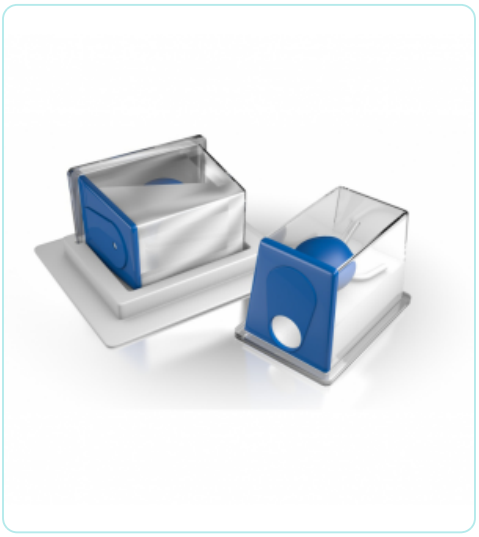
MODEL 053S 053L & 053L-EF FEATURES

- Includes rectal wall, seminal vesicles, perineal membrane and urethra
- Train for ultrasound-guided cryosurgery, seed implantation and needle biopsy with one phantom
- Compatible with multiple probes and surgical tools
- Structures are visible under CT, MRI, ultrasound and elastography
- Gel designed to minimise needle tracking

For more information, go to this page from our partner.







If you have any questions...

Contact PEO

Model 053-I Ultrasound Prostate Training Phantom – CIRS

The CIRS Ultrasound Prostate Training Phantom (model 053-I) is a disposable phantom perfect for practicing permanent seed implantation procedures. It contains several unique features to assist the teaching and learning process.

The simulated perineal membrane permits needle insertion with realistic resistance. In addition, the area below the rectal wall is a clear gel to permit visualisation of probe orientation.

PROSTATE TRAINING PHANTOM FEATURES

- Perineal membrane for needle insertion with realistic resistance
- Assess image fusion algorithms
- Test new equipment
- Optimize imaging protocols
- Improve performance of freehand abdominal biopsies

For more information about prostate phantoms, visit our partner's website!

Model 600 3D Sectional Torso Phantom – CIRS

The Model 600 3D Sectional Torso Phantom has been designed for providing an accurate simulation of an average torso (22 cm posterior-anterior thickness) for medical imaging and dosimetry applications.

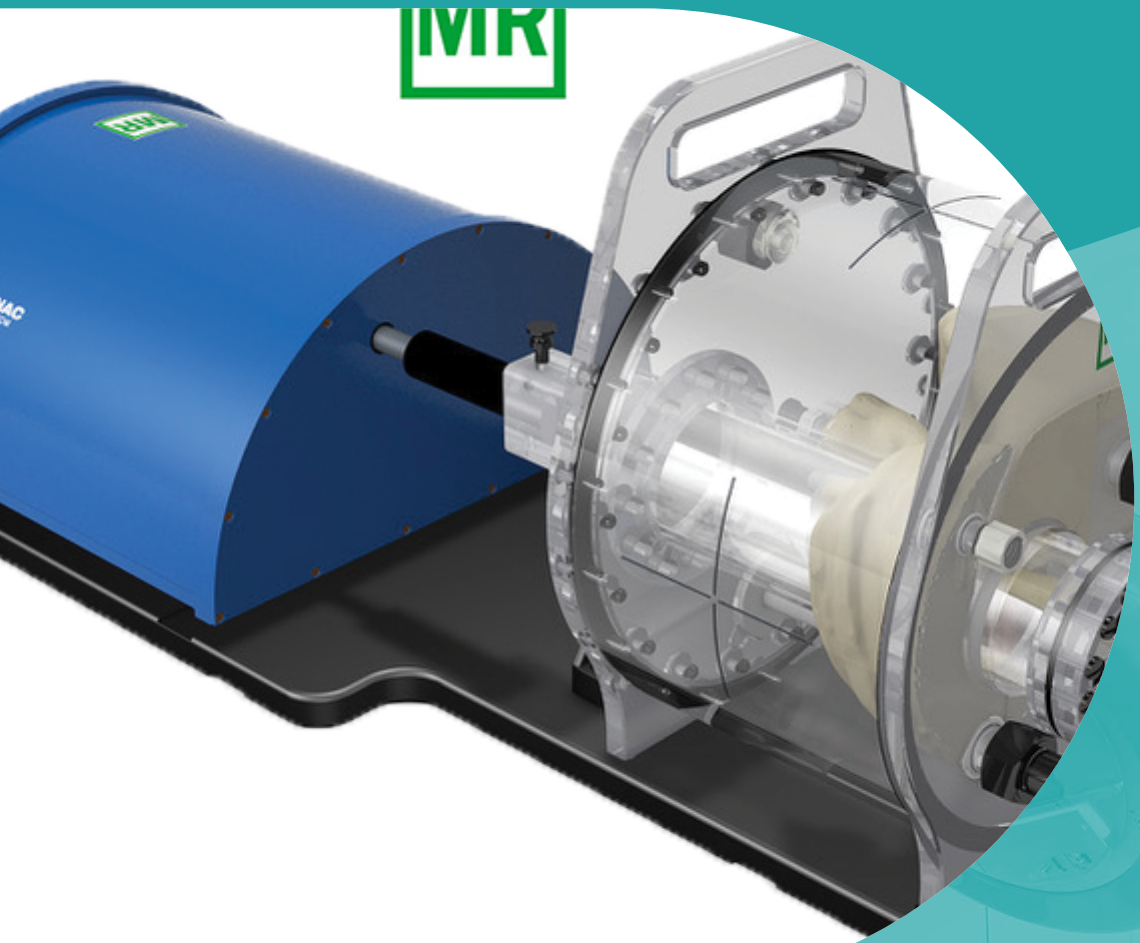
Model 600 3D Sectional Torso Phantom features:

- can be configured to accommodate a multitude of dose measurement media
- usable on any X-ray imaging or treatment device
- includes internal organ structures
- ideal for calibration, QA and training purposes when specific internal organs are of interest

Read more about the Model 600 3D Sectional Torso Phantom on the CIRS website

Model 600 3D Sectional Torso Phantom CIRS

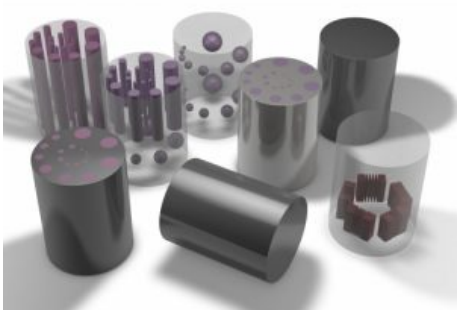
QA PHANTOMS



peo MEDICAL

Model 700-QA CT Imaging QA Kit for Atom & CT Dose Phantoms – CIRS

The Model 700-QA CT Imaging QA Kit for Atom & CT Dose Phantoms has been designed for evaluating CT performance in anthropomorphic phantoms.



Model 700-QA CT Imaging QA Kit for Atom & CT Dose Phantoms features:

- can be used in ATOM or CIRS 007TE phantoms
- 3 soft tissue inserts
- determines low contrast detectability
- evaluates spatial resolution
- 1 lung insert

Read more about the Model 700-QA CT Imaging QA Kit for Atom & CT Dose Phantoms on the CIRS website

Model 061 Helical CT Phantom – CIRS

The Model 061 Helical CT Phantom has been designed to test scanning protocols to verify that small low contrast lesions will be detected. The phantom contains a CT disk with clinically-relevant spherical targets that are 5, 10 and 20 HU above the background matrix.

Model 061 Helical CT Phantom features:

- usable on all standard and helical scanners
- compact
- valid contrast at all energy settings

Read more about the Model 061 Helical CT Phantom on the CIRS website

Model 610 AAPM CT Performance Phantom – CIRS

The CIRS Model 610 AAPM CT Performance Phantom: a single test object that measures ten distinct CT performance parameters.

Model 610 AAPM CT Performance Phantom features:

- contrast test object is adhered to the bottom of the tank that includes two rows of cavities from 1 to 0.125″ diameter
- design is based on the guidelines presented in Report 1 of the American Association of Physicists
- CT number linearity insert, high contrast resolution insert and slice width insert are housed in an 8.5″ diameter PMMA water tank

measurement capabilities:

- spatial resolution and line spread function
- noise
- slice thickness
- size independence
- HU linearity
- detectability/sensitivity
- beam hardening
- radiation dose
- spatial uniformity
- mechanical alignment

Read more about the Model 610 AAPM CT Performance Phantom on the CIRS website

Model 600 3D Sectional Torso Phantom – CIRS

The Model 600 3D Sectional Torso Phantom has been designed for providing an accurate simulation of an average torso (22 cm posterior-anterior thickness) for medical imaging and dosimetry applications.

Model 600 3D Sectional Torso Phantom features:

- can be configured to accommodate a multitude of dose measurement media
- usable on any X-ray imaging or treatment device
- includes internal organ structures
- ideal for calibration, QA and training purposes when specific internal organs are of interest

Read more about the Model 600 3D Sectional Torso Phantom on the CIRS website

Model 600 3D Sectional Torso Phantom CIRS

Model 026 DEXA Phantom – CIRS

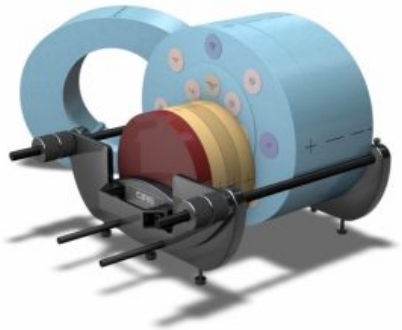
The Model 026 DEXA Phantom is a quality control tool for Dual-Energy X-ray Absorptiometry (DEXA) instruments, which features an acrylic-embedded calcium hydroxyapatite (CHA) step-wedge.

Model 026 DEXA Phantom features:

- no water bath needed
- realistic soft tissue mimic
- checks a range of densities
- FDA compliant
- universal Axial DEXA instrument compatibility
- Edge-Detection Challenge
- easy to carry and can be scanned in the bag

Read more about the Model 026 DEXA Phantom on the CIRS website

Model 062MQA CBCT Electron Density & Image Quality Phantom – CIRS



The Model 062MQA CBCT Electron Density & Image Quality Phantom is an instrument that can be used for image quality assessment and electron density calibration of Cone Beam CT systems integrated in radiation therapy devices.

Model 062MQA CBCT Electron Density & Image Quality Phantom features:

- position simulated tissue materials in CT & CBCT energy range at 17 different locations
- uses ionization chambers for dose measurements
- optimized for volumetric imaging
- performs all CT Image QA tests for AAPM TG Report 1
- calibrates electron density in multi-slice CT and Cone Beam CT
- performs off-set and central axis measurements

Read more about the Model 062MQA CBCT Electron Density & Image Quality Phantom on the CIRS website

Models 090, 091 & 092 MicroMouse & Water Filled Mouse Phantoms – CIRS

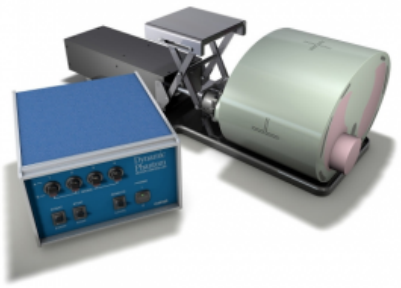
The Models 090, 091 & 092 MicroMouse & Water Filled Mouse Phantoms have been developed for providing standard of reference for micro CT scanners.

Models 090, 091 & 092 MicroMouse & Water Filled Mouse Phantoms features:

- solid or liquid filled
- lung, muscle and adipose
- water-filled Mouse Phantom contains 11 rods in a water-tight, polycarbonate housing
- provide tools for quantifying calcium and bone density with respect to X-ray attenuation and absorption properties
- 25 mg/cc – 750 mg/cc HA targets

Read more about the Models 090, 091 & 092 MicroMouse & Water Filled Mouse Phantoms on the CIRS website

Models 18023 & 18043 Xsight Lung tracking Phantom Kit & 4D Planning Phantom – CIRS



The Models 18023 & 18043 Xsight Lung tracking Phantom Kit & 4D Planning Phantom have been designed for QA and E2E testing on Cyberknife systems.

Models 18023 & 18043 Xsight Lung tracking Phantom Kit & 4D Planning Phantom features:

- validated and verified by Accuray (Cyberknife)
- execute E2E software analysis of the films (without CT number adjustment)
- visualize 4D treatment optimization using the MultiPlan System
- display detected respiratory motion of tissue-simulated lung, torso tumor and critical structures with Synchrony System
- use Xsight Spine Tracking System for initial phantom alignment

Xsight Lung tracking Phantom:

- represents an average human thorax in proportion, shape and composition
- pre-programmed motion controller, surrogate platform and motion actuator box for linear target motion
- 3D anthropomorphic spine with cortical and trabecular ribs, bone and lung lobes
- Lung Ball Cube Rod with tumor-simulating target and radiochromic film

4D Planning Phantom:

- rotating (manual) trabecular bone-equivalent spine with film insert
- can be interchanged with the XLT body and connected to the motion actuator box
- modified phantom body with lung lobes and spine
- high-density Lung Ball Cube Rod with tumor-simulating target and radiochromic film

Read more about the Models 18023 & 18043 Xsight Lung tracking Phantom Kit & 4D Planning Phantom on the CIRS website

Model 007TE Tissue Equivalent CT Dose Phantoms – CIRS

The CIRS Tissue Equivalent CT Dose Phantoms (model 007TE) accurately simulate the patient's anatomy in the range of sizes from small infants to large adult patients rendering more accurate and reliable CT dose data.

The phantom bodies are made from proprietary epoxy formulations that faithfully mimic the scatter properties and X-ray absorption of water or soft tissue within 1% in the diagnostic energy range.

Available are 4 head, 8 thorax and 8 abdominal phantoms of different sizes and ages.

Model 007TE Tissue Equivalent CT Dose Phantoms specifications:

- can be used on all CT scanners;
- inside hole sized for standard CT Dose probes, 1.30 cm diameter;
- simulates patient abdominal, thorax and head regions;
- from infant to large adult, size-specific options;
- made from tissue equivalent epoxy.

Read more about the Model 007TE Tissue Equivalent CT Dose Phantoms on the CIRS website.

Model 004 CT Simulator for Bone Mineral Analysis – CIRS

The Model 004 CT Simulator for Bone Mineral Analysis takes into account all the known sources of variance affecting the measurement of density in the vertebral area. The model 004 simulates the average patient's anatomy in terms of density and shape. Also materials are used which are essentially equivalent to human tissues as far as X-ray interactions are concerned, this includes age-related variations in vertebral composition.

Model 004 CT Simulator For Bone Mineral Analysis features:

- special scanner software is not required
- for mineral content and marrow fat: age related variable corrections
- accurate correlation for quantitative studies
- measure calcium hydroxyapatite content directly
- directly usable on any CT scanner
- simulation of the CT density, shape and size of human tissue
- effects monitoring of therapy on trabecular structure

Read more about the Model 004 CT Simulator for Bone Mineral Analysis on the CIRS website.

QA MEASUREMENT SYSTEMS

peo MEDICAL

ZEUS: MRGRT MOTION MANAGEMENT QA PHANTOM (Model 008Z) – CIRS

IMAGE ACQUISITION • TREATMENT PLANNING • DOSE DELIVERY

The integration of MR imaging in radiation therapy facilitates real-time motion management. The CIRS Zeus MRgRT Motion Management QA phantom is designed to address such needs. Zeus is MR Safe due to the use of piezoelectric motors and non-ferromagnetic materials. The two piezoelectric motors move a cylindrical insert, which contains a tracking target, through a gel/liquid fillable body by rotating it inde-pendently from the motion in the Inferior-Superior direction.

The moving insert contains an organic shaped target (tumor) filled with gel, which is surrounded by the same background gel used to fill the body. The body represents a heterogenous background due to simulated lungs, liver, kidney, and spine. The simulated organs are anatomical in shape and have a life-like spatial relationship. They are filled with gels that provide contrast in CT and MR versus the background gel, which fills the void between the organs. Be-sides imaging, all organs, except for the lungs, offer ion chamber dosimetry cavities, which allow for completing an entire QA process; from imaging to planning to verification of dose delivered.

ZEUS

Zeus is designed as a single unit with a piezo actuator fixed permanently to a base plate on which the MRI body “snaps”. This allows for quick setup, removal, filling, and storage purposes. The phantom’s base plate has machined slots on the bottom, which allow for the use of indexing bars for precise and repeatable/reproducible phantom-MRI (MRI-Linac) alignment.

CIRS Motion Control software drives this phantom as well as the other phantoms from the CIRS dynamic family. In addition to multiple built-in motion profiles, which are more appropriate for commissioning and routine QA, the software allows for the import of complex patient-specific respiratory waveforms. The user can edit the waveforms for amplitude, sample rate, cycle time, phase shift, and baseline position. It also allows the setup of independently controllable waveforms for linear and rotation motion of the insert. Zeus’ can gate Inferior-Superior motion of the insert/moving target based on amplitude to allow verification of beam latency. The motion controller box provides an interface (BNC physical input type) for the Beam-on Beam-off signal, which is read by the Motion Control software to calculate the Beam Latency specific to hybrid MRI-Linac systems.

Motion Management QA Phantom Features:

- Piezoelectric motors, non-ferromagnetic materials => MR safe
- Allows for positioning within magnet bore due to piezoelectric motors
- Easy setup, removal, alignment, positioning
- Organic shaped Organs at Risk and moving target
- Can be imaged in MRI, CT, PET and hybrid systems
- Ion chamber dosimetry in Liver, Kidney, Spine and moving target

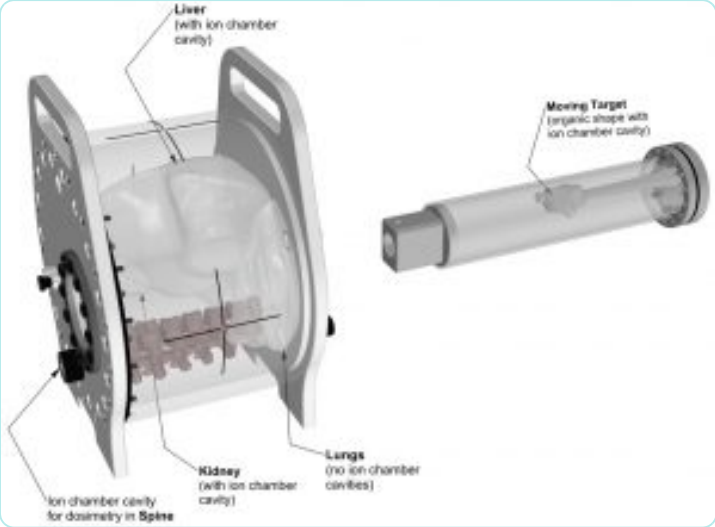
- 3D tissue equivalent Spine for bone landmark
- Two independently programmable motions for the moving target
- Import, edit, and save patient specific breathing waveforms in addition to built-in QA waveforms
- Calculate beam latency from beam-on, beam-off signal

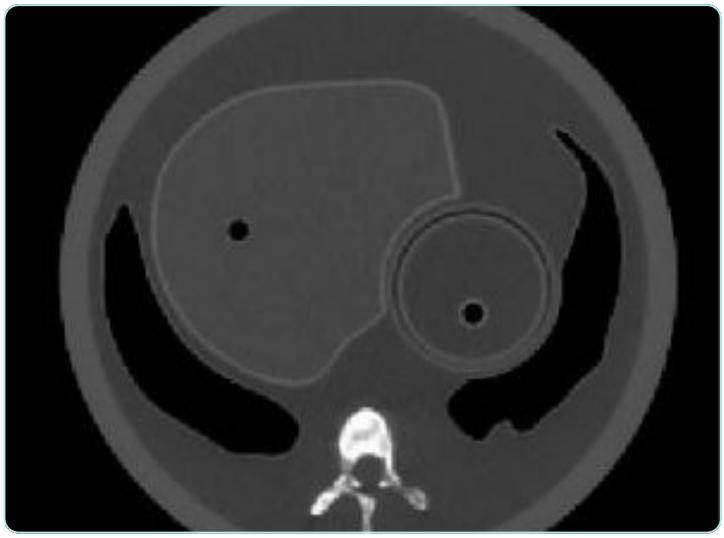
NOTE: *This product or an optional accessory of this product requires a CIRS dosimetry cavity code before an order can be placed. Please refer to the Dosimetry Cavity Codes document to identify the CIRS code for the probe you intend to use with this product.*

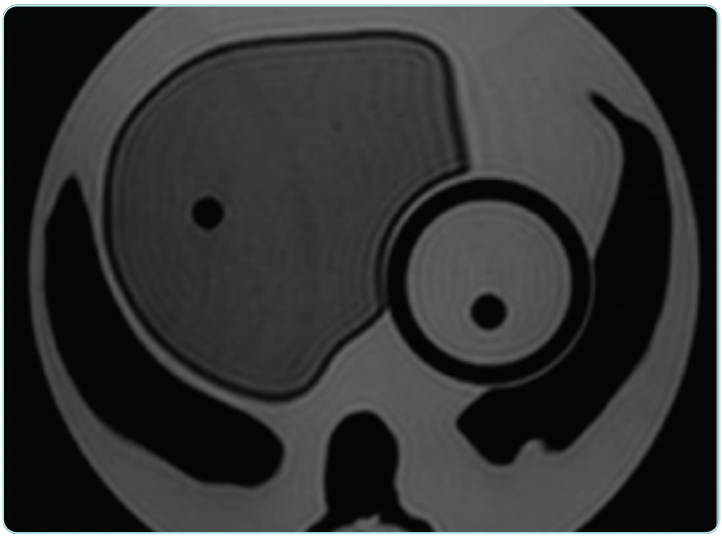
If you want to read more about this phantom, read this PEO article.

https://youtu.be/JHoB828shRQ

SCAN TO VIEW VIDEO







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