STANDARD IMAGING®

SOLUTIONS FINDER

Daily QA

- QABC+
- MIMI
- HexaCheck
- QA Pilot
- ISO Cube
- CT SIM Check

MONTHLY QA

- PIPSpro
- QACC
- DV1D
- QA Pilot
- TG142 Check
- DP 1000

ANNUAL QA

- DV3D
- EXRADIN
- W2
- QA Pilot
- DP 1000

STEREOTACTIC

- LUCY
- SDVP
- EXRADIN
- Adaptivo
- MAX EA
- SuperMAX
- W2
- PIPSpro
- MAX EI
- MAX HD

ABSOLUTE DOSIMETRY

- DV1D
- SuperMAX
- EXRADIN
- GrID

PATIENT DOSIMETRY

- Adaptivo
- LinacView
- IMSure
- IMSure 3D

CYBERKNIFE

- QASC
- SDVP
- EXRADIN
- DV1D
- QABC+
- SuperMAX
- PIPSpro
- QACC

QA BeamChecker Plus

- ✓ Simple, fast, reliable daily Linac QA
- ✓ Automatic energy detection
- ✓ Software - free operation
- ✓ Convenient data trending and reporting

HexaCheck | MIMI | ISO Cube | QA PILOT | CT SIM Check

Brochure

HOME

DAILY QA

STANDARD IMAGING

QA BEAMCHECKER PLUS

RELIABLE AND UNCOMPLICATED DAILY QA

Save valuable time with fewer trips in and out of the vault, automatic energy detection, quick measurements and customizable QA interface - no cables and no PC required.

Perform routine daily QA measurements for traditional linear accelerators and rotational VMAT systems including those from Varian, Elekta, and Accuray.

The QA BeamChecker Plus performing a combined dosimetric check in rotational mode

"WE HAVE THE QA BEAMCHECKER PLUS AT THREE SITES. IT IS THE BEST DEVICE I HAVE USED IN 25 YEARS AS A MEDICAL PHYSICIST."

AL FOSTER, PHD
SENIOR MEDICAL PHYSICIST
IU HEALTH BALL MEMORIAL HOSPITAL

PATENTED SOFTWARE-FREE TECHNOLOGY After creating measurement baselines using the included PC software, no cables or software are needed for your daily QA routine. With automatic energy detection you can complete efficient daily QA in seconds.

QABC+

HOME

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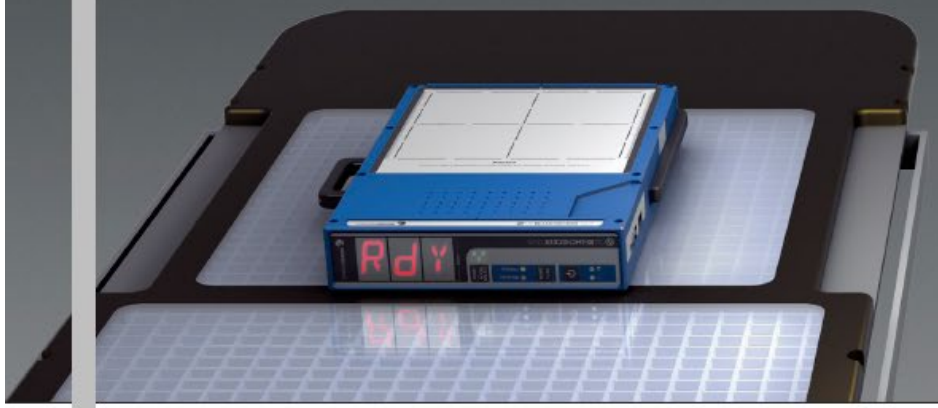
STANDARD IMAGING

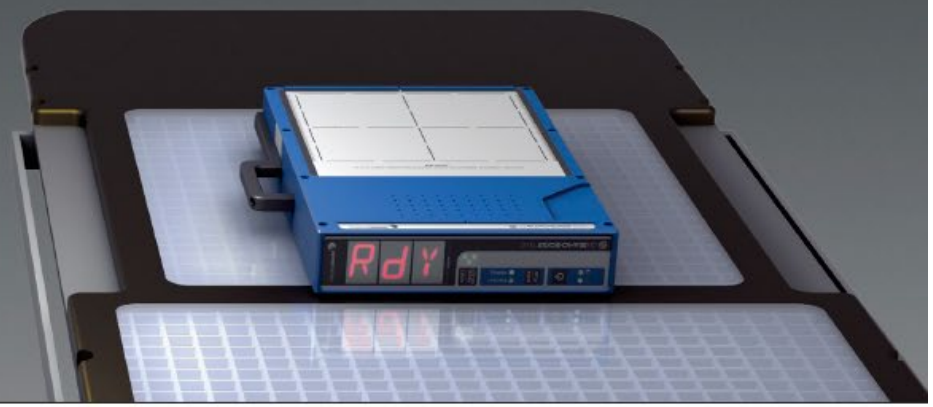
QA BEAMCHECKER PLUS

SOFTWARE-FREE QA



QA BEAMCHECKER PLUS – WIRELESS

COMMUNICATE WIRELESSLY WITH VAULT PC FOR EASY QA



QABC+

Brochure 2 of 5

SOFTWARE-FREE MODE

A pass/fail result for each energy is indicated in a large, brightly lit display, clearly visible from the patient monitor. Unlike other devices, you do not have to control the QA BeamChecker Plus from a PC. The device is a cable- and software-free solution right out of the box, with a more streamlined user experience than the competition to help minimize the potential for user error. This means less clutter in the accelerator room, no cable replacement costs, and a safer work environment.

MULTIPLE VAULT CAPABILITY

Up to 9 treatment rooms/vaults can be managed with just one QA BeamChecker Plus. Using the communication software, a complete set of baselines can be created for each specific room. Once a room has been created, it's saved within the QA BeamChecker Plus and available in any module, including software-free. Simply select the desired room and the QA BeamChecker Plus automatically detects the daily energy output by the treatment machine.

REAL-TIME OPERATION

The Real-Time Operation module provides the same QA information as the software-free module, however it displays comprehensive measurement parameters at the time of exposure via a PC software interface. Get access to baseline settings along with percentage comparisons, temperature/pressure readings, and precise chamber measurement information. Information collected in this module can be optionally discarded from the QA record, making this module ideal for teaching, troubleshooting, and research.

WIRELESS COMMUNICATION

The Bluetooth Adapter Kit allows PC-only operations to be performed wirelessly. Take advantage of this convenient kit and experience the additional freedom of using the software while remaining wireless. Upgradeable at any time.

HOME

DAILY QA

STANDARD IMAGING

FAST & EASY ... QA BEAMCHECKER PLUS

REDUCE UNNECESSARY TRIPS INTO THE TREATMENT ROOM

1 BEAMCHECKER

CAN BE USED FOR UP TO

9 TREATMENT ROOMS

ADAPTABLE TECHNOLOGY

The physics Module puts the physicist in complete control of the accumulation and interpretation of measurement data. Use the QA BeamChecker Plus as a basic ion chamber array for research, experimentation, and other custom applications. By providing access to raw chamber readings, it is possible to perform rate and timed charge measurements via an intuitive software interface. Beam parameters unique to the treatment method used are displayed, such flatness and symmetry in linac module or lateral profile constancy in TomoTherapy module. When completed, measurement data can be exported to a .csv file for additional analysis.

ENHANCED FEATURES

The QA BeamChecker Plus is capable of handling output measurements for the most advanced accelerator modes, such as flattening-filter free beams using the integrated baseline comparison for easy tracking and trending of values. Deliver a unique plan with a dynamic wedge included to assess the core functionality of it.

INTEGRATED BUILDUP

Integrated build-up for all supported energies eliminates the need to enter the vault between measurements. A built-in 3.5 cm layer of water equivalent material for photons, or 1.5 cm layer for electrons, eliminates the need for build-up plates. Easily toggle between photon and electron measurements by simply turning the device over.

POWER/DATA CRADLE

Quickly download up to one month of stored data and simultaneously ensure the QA BeamChecker Plus is fully charged using the Power/Data cradle. Complete your routine, place the instrument back on the cradle for easy charging and PC communication. The cradle connects to your PC and provides quick, convenient downloading of measurement data using the powerful software interface.

QABC+
HOME
Brochure 3 of 5

HIGH DOSE RATE COMPATIBILITY

DOSE RATES UP TO 2400 MU/MIN

ROTATIONAL AND DYNAMIC QA

The QA BeamChecker Plus has Varian Rapid Arc and Elekta VMAT systems covered with the Dynamic 5 Channel Capability. This module provides a combined dosimetric check of the treatment system, allowing for an output constancy check of each temperature and pressure corrected detector within the instrument. Up to 25 plans can be created for each treatment room, so highly customized QA procedures can be developed to test multiple aspects of the system such as various energies and gantry rotation speeds. This allows for advanced testing to meet your TG-142 or other protocol requirements.

Using this device, perform enhanced dynamic wedge and tissue phantom ratio measurements- further accomplishing multiple QA tasks while saving time and money. The QA Beamchecker Plus provides even more confidence in your Daily QA testing.

ADVANCED SIGNAL PROCESSING The QA BeamChecker Plus features advanced signal processing allowing for accurate analysis of beams delivered at high dose rates up to 2400 MU/min. This capability meets the requirements for full use with machines such as the Varian TrueBeam and Versa HD.

INTUITIVE COMMUNICATION SOFTWARE

A STRAIGHT OUT OF THE BOX SOLUTION

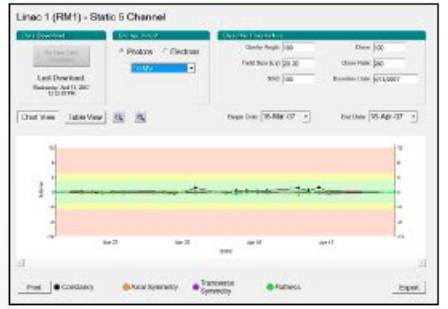
EASY TO USE COMMUNICATION SOFTWARE

The QA BeamChecker Plus software provides an intuitive platform to establish baselines or acquire data with if desired. Historical measurements can be easily accessed, analyzed and exported if desired. The software is compatible with server-based IT solutions making the QA BeamChecker Plus an excellent solution for any institution with an internal network.

QA BeamChecker Plus Physics Mode

POWERFUL REPORTING

After measurement data has been acquired by the QA BeamChecker Plus in software-free or Real-Time Operation modes, details and trending can be reviewed using the Data View module. QA data can be viewed in chart or table format by specified date range, printed in a convenient report, or exported to a .csv file including raw measurement information for further analysis. Additionally, PDF reports include signoff and variable charting capabilities.



View measurement data in chart or table view, print a report, or export to .csv for a custom reporting solution

QABC+

HOME

Brochure 4 of 5

ADDITIONAL ACCESSORIES

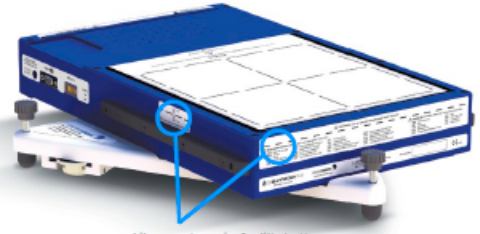
ADD EVEN MORE QA FLEXIBILITY

GANTRY MOUNT

Attach the QA BeamChecker Plus to the linear accelerator gantry for precise, repeatable positioning. Rotate the treatment machine and test at multiple angles for even more QA options.

PRECISION TOMOTHERAPY LEVELING PLATFORM

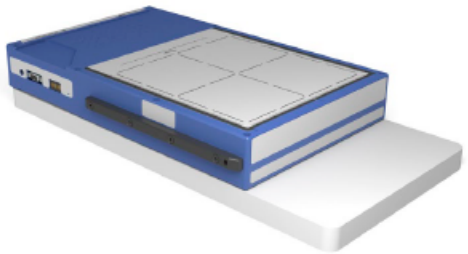
Level the QA BeamChecker Plus on the TomoTherapy Hi·Art System treatment couch for virtual and real isocenter laser accuracy measurements. Integrates seamlessly with other TomoTherapy daily QA procedures. Bubble level stores conveniently when not in use.



Alignment marks facilitate the TomoTherapy® laser accuracy test (D6)

AUTOMATIC ALIGNMENT FOR CYBERKNIFE SYSTEMS

The Cutting Board for QA BeamChecker Plus is equipped with implanted fiducial markers which allow for accurate alignment of the QABC+ using the CyberKnife® system's treatment localization system (TLS).



TOMOTHERAPY HI·ART SYSTEM DAILY QA

The QA BeamChecker Plus can be used for TomoTherapy Hi·Art System daily QA tests following those listed in J.D. Fenwick et al, "Quality assurance of a helical TomoTherapy machine"[1]. Develop custom static and 4D treatment plans and deliver to the QA BeamChecker Plus to establish baselines.

Additionally, multiple static and dynamic plans can be developed to test each jaw width setting individually. Only two exposures are needed to perform these tests. No re-positioning of the QA BeamChecker Plus is necessary between the two exposures, saving you time.

QA BEAMCHECKER PLUS SPECIFICATIONS

8 Vented Ionization Chambers, Fully Guarded — One center detector // Four quadrant detectors (7.5 cm from center) // Three energy identification chambers

Chamber Volume — 0.6 cm³ // **Parallel Plate Separation** — 4.0 mm // **Collection Electrode** — 1.39 cm diameter

Inherent Water-Equivalent Buildup — PHOTONS: 3.5 cm // ELECTRONS 1.5 cm

Supported Energies — PHOTONS 60Co to 25 MV // ELECTRONS 6 MeV to 25 MeV

Multiple Vault Capability — Up to 9 rooms, any combination of linear accelerator or rotational systems

Temperature and Pressure Measurement — Precision sensor on board, automatic compensation

QABC Plus

Dimensions — Height 6.15 cm (2.42 in) // Width 30.86 cm (12.15 in) // Length 40.64 cm (16 in) // Weight 5.0 kg (11 lbs)

Power/Data Cradle

Dimensions — Height 7.16 cm (2.82 in) // Width 10.16 cm (4.0 in) // Length 29.21 cm (11.50 in) // Weight 1.8 kg (4 lbs)

Light Field Alignment — 20 cm x 20 cm alignment grid for easy setup

TomoTherapy Alignment — Three 2 mm embedded lead BBs, top, rear, side alignment marks

Real Time Clock — Date and time stamp for all measurements

Internal Memory — Store 512 data points before transfer required

Power/Data Cradle — Two 9 pin serial cables provided, 7.6 m (25 ft) and 33 m (100 ft)

Battery — 1.3 Ah SLA, approximately 4 hours continuous use, user replaceable

Charger Input — 90 - 240 VAC, 50-60 hz, IEC 60601-1 approved wall mounted power supply

Peripherals — CD-ROM Drive, One available serial port

Options — Gantry Mount (REF 70500) // Additional Power/Data Cradle (REF 70502) // Serial to USB adapter (REF 70503) // Precision TomoTherapy Leveling Platform (REF 70505) // Bluetooth Adapter Kit (REF 70504)

Software/Computer Requirements

Operating System — Windows® 10 Professional, 64 bit recommended

Processor — Dual Core, 1 GHz; Quad Core, 2 GHz Recommended

Memory — 32-bit OS: 2 GB, 4 GB Recommended 64-bit OS: 4 GB, 8 GB Recommended

Hard Drive — 32 GB or greater, 1 GB free space for initial software setup. 25% free space recommended.

Screen Resolution — 1024 x 768 or greater // **Optical Drive** — Compact Disc (CD) or Digital Versatile Disc (DVD)

Connectivity — 9 pin RS-232 serial port and IPv4 LAN, 100 Mbit/s or greater

Specifications subject to change without notice.

QABC+

HOME

Brochure 5 of 5

MIMI Phantom

- ✓ Easy Alignment
- ✓ Automatic registratic 3D/3D matching
- ✓ Verify isocenter with
- ✓ Fits exclusively inside couch commissioning

HexaCheck

QABC+

ISO Cube

QA PILOT

CT SIM Check

Brochure

HOME

STANDARD IMAGING

MIMI PHANTOM

ISOCENTER ALIGNMENT IGRT QA

Test the coincidence of the isocenter prescribed by the lasers, treatment beam, 6D couches, and image guidance systems

Ensure Image Guidance Accuracy

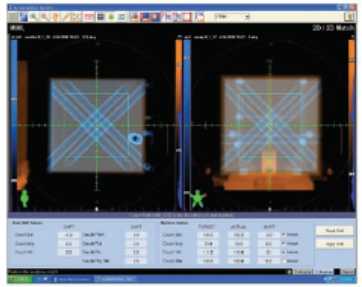
Treatment with radiation on a modern linear accelerator relies on the ability to position the patient with incredible accuracy. This is why it is critically important to verify that the systems used for positioning are all describing the same isocentric point in space as the treatment beam.

Fast, Accurate Alignment Checks

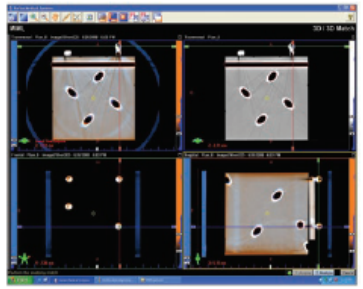
The MIMI (Multiple Imaging Modality Isocentricity) Phantom from Standard Imaging allows you to establish mechanical stability of the image guidance system by verifying the isocenter described by the MV, kV, CBCT, and other guidance systems is within accepted 1mm tolerances. This daily test can be performed in 2 minutes giving you the confidence that you can deliver the radiation prescription on target. A 6.4 mm sphere at phantom center assists with virtual and physical graticule alignment checks.

Automatic Registration Alignment Design

Five bone equivalent rods are uniquely set so that four of them intersect at 90 degree angles when viewed in DRRs or a 2D projection image. The rods traverse the entire phantom making them visible in any image or slice allowing for easy and automatic 2D/2D and 3D/3D matching registration for fast verification of isocenter position.



A 2D/2D matching example with the MIMI Phantom



A 3D/3D matching example with the MIMI Phantom

FEATURES

Varian FramelessArray™ Optical Guidance System QA

- The MIMI Phantom features pre-drilled holes which precisely fit the Varian FramelessArray Optical Guidance System localizer. By fitting the localizer to the phantom, additional testing can be done to verify the isocenter prescribed by the optical guidance system is coincidental to the lasers and the treatment beam isocenter.

Test Automatic Table Adjustments

- The MIMI Phantom features additional cross-hair markers that are offset known distances from the true isocenter. Setting up the phantom aligned to these offsets allows you to verify the shifts prescribed by automatic table positioning systems.

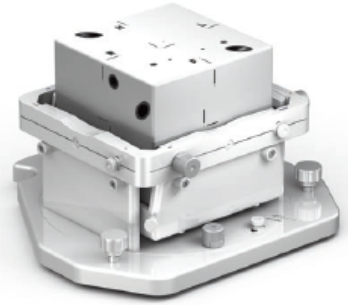
Offset cross-hair markers on the MIMI Phantom, shown in red, are on all sides except the bottom

Test Integrated System Accuracy of:

- 3D Cone Beam registration (CBCT, OBI, XVI) systems
- MV/kV Isocentricity
- Lasers and Couch Table Adjustments
- Optical Guidance Systems
- Virtual and physical graticules
- 6D couch pitch, yaw, roll

HexaCheck

Designed exclusively for the MIMI phantom, the HexaCheck allows secure integration with the MIMI Phantom making it easy to perform 6D couch commissioning and QA.



Accuracy in 6 Dimensions

- Select up to three angle offsets disengaging and locking one of three pins and for each desired ± 2.5° angular offset for pitch, yaw, and roll.
- Instantly locks into couch for isocenter alignment and repeatable positioning to within 0.1°.
- Compatible with a wide range of couches, including: Varian Perfect Pitch, Elekta HexaPod, CIVCO Protura, Brainlab Robotics 6D, and Accuray RoboCouch.
- Built-in spirit level.
- HexaCheck fits seamlessly into your workflow as an extension of your 3D IGRT QA routine. And if you're a PIPSpro user, you're in luck – 6D couch QA functionality is already built into PIPSpro's IGRT QA module.

The MIMI Phantom was developed in collaboration with Peter Remeijer and Marcel Van Herk of the Netherlands Cancer Institute, NKI-AVL, Amsterdam, The Netherlands

MIMI PHANTOM (REF 91240) SPECIFICATIONS

MIMI PHANTOM DIMENSIONS	*Height:* 5.5 in, 14 cm *Length:* 5.5 in, 14 cm	*Width:* 5.5 in, 14 cm *Weight:* 8.25 lbs, 3.75 kg
MATERIALS	Acetal copolymer for main phantom Black PVC Rods (bone equivalent) (30) 1 mm stainless steel spheres 6.4 mm high contrast, non-artifact sphere in center	

HEXACHECK DIMENSIONS	*Height:* 4.7 in, 11.9 cm *Length:* 11.2 in, 28.5 cm	*Width:* 11.5 in, 29.2 cm *Weight:* 6.35 lbs, 2.9 kg
MATERIALS	Acetal for HexaCheck and thumbscrews Aluminum hardware ensures no imaging artifacts	

MIMI
HOME
Brochure 1 of 1

HexaCheck

- ✓ Unique gimbal mount always maintains phantom isocenter during shifts
- ✓ Pre-set distances make convenient and repeatable setups for testing 6D couch accuracy
- ✓ Universal couch lock makes repeatable positioning simple

Brochure


MIMI


QABC+


ISO Cube

QA PILOT
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CT SIM Check

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DAILY QA

STANDARD IMAGING

MIMI PHANTOM

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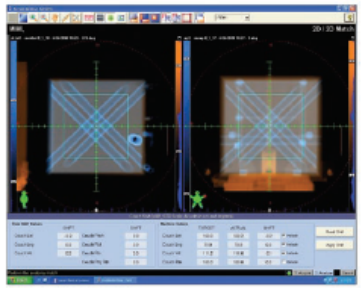

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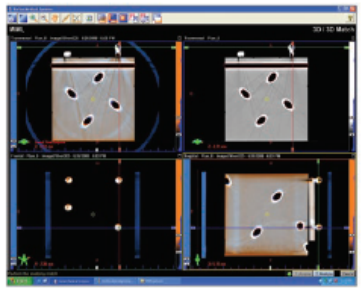

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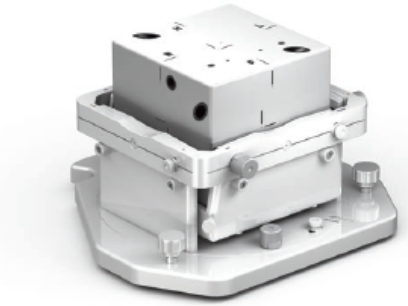

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MATERIALS	Acetal for HexaCheck and thumbscrews Aluminum hardware ensures no imaging artifacts		

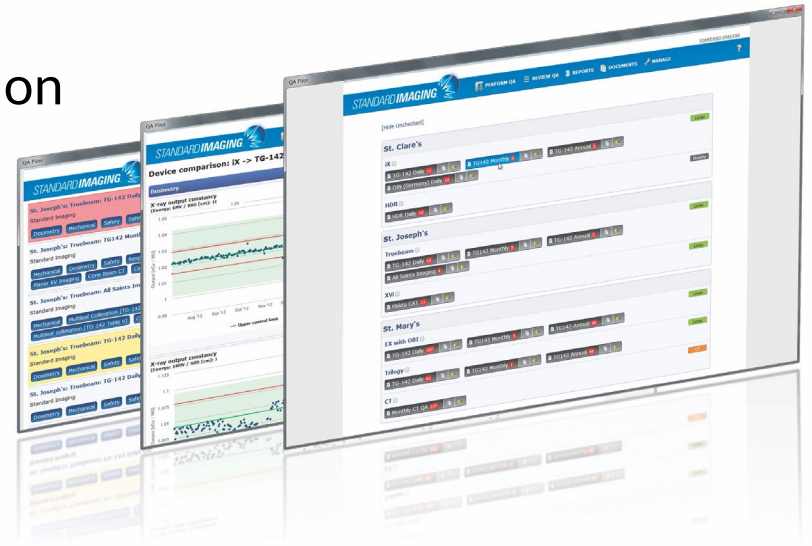
HexaCheck

HOME

Brochure 1 of 1

QA Pilot Software

- ✓ The only ***QA vendor-neutral*** QA data hub on the market
- ✓ All your QA tests and scheduling in one place
- ✓ Comprehensive departmental, audit and process improvement management tools.
- ✓ Secure, cloud-based access to data from anywhere with an internet connection



HexaCheck

QABC+

ISO Cube

MIMI

CT SIM Check

Brochure

HOME

STANDARD IMAGING

QA PILOT

A NEW WAY TO VIEW QA

An integrated platform to centralize and manage machine and QA performance.

ALL CLINICS ARE TASKED WITH RECORDING, REPORTING AND ARCHIVING vast amounts of data to document machine performance for accreditation and auditing. QA Pilot makes these tasks more manageable. No more spreadsheets or multiple program management. Instead, with QA Pilot you can access and manage all of your QA data in real time from one secure, unified location anywhere internet is available, with any web-capable device.

QA Pilot's simple dashboard views create a fast and easy way to keep track of all machine QA. Collect, compare, report, analyze and share data from a number of linacs, systems, and users. Automatically import data from commonly used QA devices, or enter data with convenient drop-down menus and auto-populated fields. All data entries and edits are date/time stamped in a consolidated database, making collaboration across multiple sites a breeze. Implement daily, monthly and yearly reports for the protocol of your choice, such as TG-142, so you can easily keep track of your linac QA and ensure all equipment is in tolerance. QA Pilot is ACR, DVN, and JCAHO compliant.

"I can gather and manage all my QA data and documents in one place and I'm not limited to one particular QA vendor so I can use different QA devices across multiple facilities. The really exciting thing about this cloud-based solution is the future directions of radiation therapy QA for data management and decision making."

Todd Pawlicki, Ph.D.
Chief of Physics

A NEW WAY TO VIEW QA

QA Pilot is a QA management system developed with workflows for QA protocols, such as TG-142, in mind

Record data for ALL tests in TG-142 protocol	✓
Trend results with TG-142 or custom specifications	✓
Automatic e-mail alert notifications when tolerances are exceeded	✓
Longitudinal and distribution plots for all numerical data	✓
HIPPA/HITECH compliant network	✓
Retrieve data automatically from multiple common daily QA devices	✓
Build new protocols with provided templates	✓
Accessible from any internet connected device	✓
Access data from multiple devices with single license	✓
SaaS (Software as a Service)	✓
Capital expenditure	NONE
Software installation	NONE
Store calibration documentation with specific QA devices	✓
Manage QA equipment across your organization	✓
Complete control of users viewing and entering QA tasks per department or network	✓
Save and resume in progress QA activities	✓

QA PILOT
QA PILOT
HOME
Brochure 1 of 3

DAILY QA

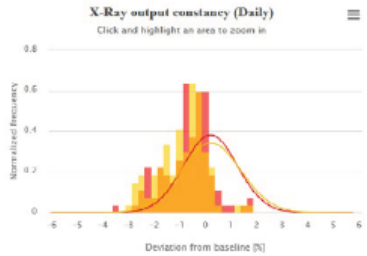
STANDARD IMAGING

QA PILOT

- Schedules
- Review
- Reports
- Analysis
- Manage
- Help

PERFORM QA

Access your data from any internet enabled device, including mobile. View the dashboard report, manage equipment tolerance, receive push notifications and communicate with responsible staff.



QA Your Way

QA Pilot's interface is very flexible, letting you create the tool that's right for you. Control visibility and actions for sites, linacs, users, and especially QA templates and reports. You can also import previous databases to fully integrate and retain QA history, and show or hide historical data deviations from baseline.

QA Pilot lets you create completely new tests, test groups and protocols that can be used for new technologies and the customized requirements of your facilities.

Plus, save time with the ability to copy and paste QA templates, organize custom tests by machine type, and create baseline values from a report to designate important data points.

Vendor Neutral Compatibility

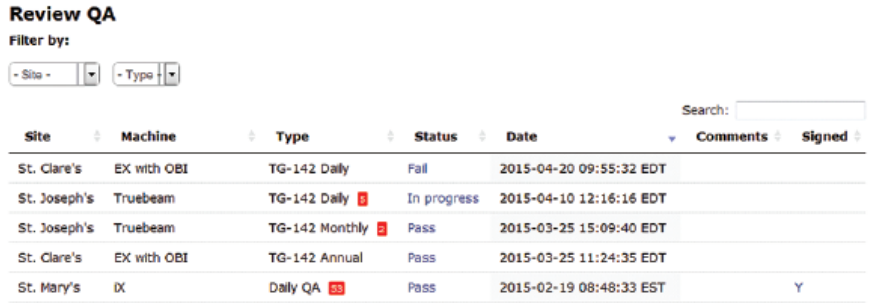
Connect directly to Standard Imaging equipment used for TG-142 QA, or protocol of your choice. You can also import data seamlessly from other vendors unifying all your QA products providing vendor neutral data collection for automated integration.

Direct Connect

Data is collected automatically from supported devices, such as the QA BeamChecker Plus and PIPSpro Software.

REVIEW QA

Easy-to-read overview of machine QA workflow with actionable data

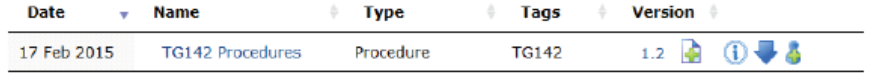


Powerful QA Workflow with Document Sign Off

Workflow actions are stored and easily accessible to clinicians and administrators for seamless communication. Implement document signoff requirements from one or more individuals or roles. You can set deadlines for signoffs with automatic email alerts sent to the appropriate individuals.

Real-Time Performance Monitoring and Email Alerts

Get an at-a-glance overview of all your machines with the ability to see reported data. Instant out-of-tolerance email alerts and easily identifiable notifications help you respond before errors become clinically relevant.



Document Manager

Store legacy QA data and calibrations; control and keep procedures with a built in Document Repository.

Document Management Asset Accreditation

Store and manage your QA and certification related materials. Upload version-controlled files effortlessly from anywhere in your organization, ensuring current versions of policies and procedures are available during inspections. Assign documents for review by creating due dates, sign off and restrictions for select personnel.

QA PILOT

HOME

Brochure 2 of 3

STANDARD IMAGING

QA PILOT

QA PILOT

HOME

Brochure 3 of 3

QA REPORTING

Powerful QA reports & trending for a fast, easy way to keep track of all linac QA

Customizable Interface

Create baseline and tolerances and then compare at a glance across all QA devices.

Historical Trends

All numerical measurements can be trended over time with a customized view that can be set by date or energy. Tolerance and alert limits can also be displayed on the plots to easily view changes in data over time.

Equipment Manager

Upload and store all relevant documents associated with calibrations and apply calibration factors automatically to your data when appropriate. Reminders can be set up to ensure you're reminded when calibration on your equipment is due for recalibration.

WHY QA PILOT?

QA data in the cloud is secure, easy to manage and optimized for mobile devices

QA DATA IN THE CLOUD

Security
provides data encryption and backup

Convenience
installation free with easy access anywhere

Accountability
peer-to-peer review with secure collaboration

No Maintenance Required

Software as a Service (SaaS) platform means:

- No software installation/management necessary
- Only internet access is required
- No internal in-house servers or IT support needed

Easy Calibration Management

No more searching for calibration documents. QA Pilot allows you to store calibration information and documents for your devices. Reminders will alert you of pending calibration expirations.

Secure Data

Data is securely stored, double encrypted and password protected on Amazon servers, meeting all HIPAA and EU compliance standards. To comply with ACR, DVN, and JCAHO requirements, all entries and edits are date/time stamped.

Mobile Optimized

Access from a mobile enabled device for dashboard reports, manage equipment tolerances, receive push notifications, and communicate with responsible staff.

IMPROVE CLINIC OPERATIONS

HOW DOES QA PILOT IMPROVE SAFETY?

- At-a-glance analysis and status of all required tests and machine performance
- Be notified immediately when a machine is out of tolerance
- World class data integrity with HIPAA Compliant Amazon Servers, securing all your data

HOW DOES QA PILOT MAKE MY CLINIC MORE EFFICIENT?

- See how your clinic compares to others with similar machines with distribution plotting
- Easily store and produce all reports on-demand for the ACR and other regulatory agencies
- Easy to use, browser based software, connecting all your clinics/machines together
- Assignable user rights allowing you to schedule and follow up on non-compliance

ISO Cube

- ✓ **Complete Verification**
  Laser Alignment Verification. Light Field Size Verification. Verify kV and MV imager coincidence. Verify Field / Light Alignment.

- ✓ **Offset Target Fiducial for Verified Accuracy**
  Used to evaluate the accuracy of table offset coordinates generated by kV/MV imaging by locating the target, performing a table shift, and verifying the target has been positioned at isocenter.

- ✓ **Powerful Precision**
  Machining tolerance of ± 0.1 mm. Target positioning accuracy is ± 0.1 mm.

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CT SIM Check
MIMI
iQA
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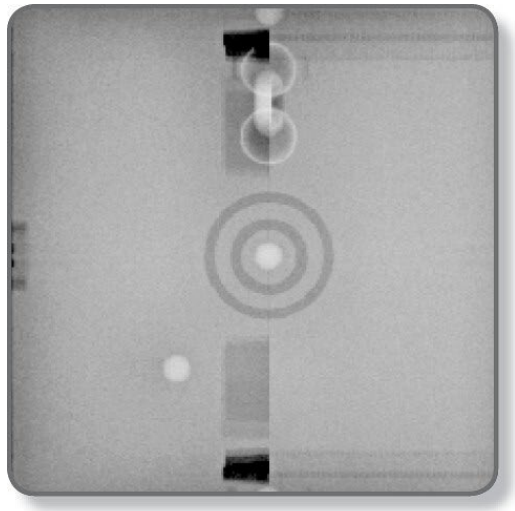
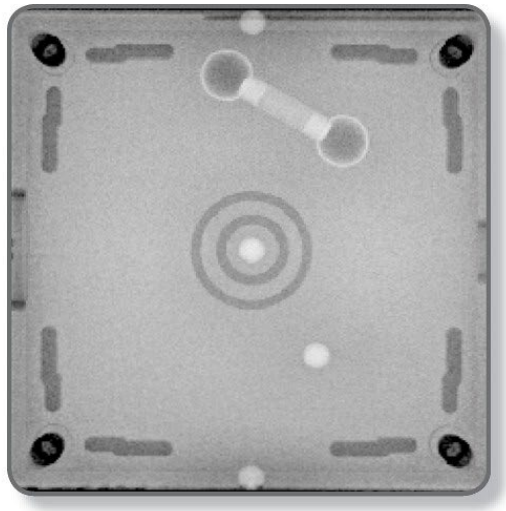
ISO Cube

- ✓ Align with Confidence

Sensitivity to detect misalignment of the source and detector. Concentric circle targets to allow for straightforward assessment of all setup errors, including rotations, and easily alignment of the phantom to the true radiation isocenter.



kV AP Image



kV Lat Image

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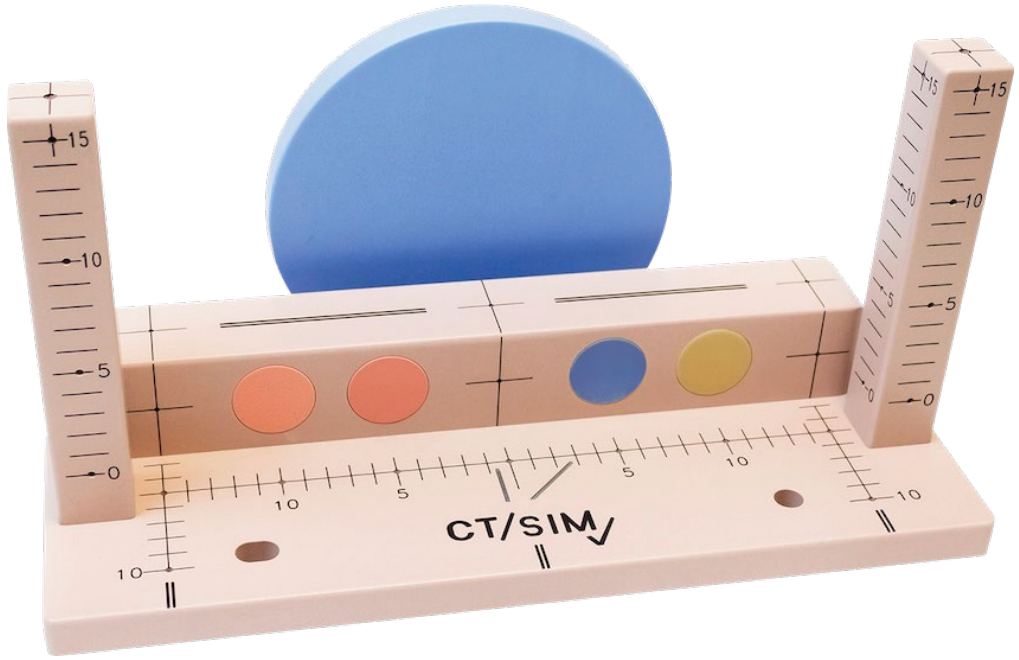
CT SIM Check

✓ **All in One**
Replaces all your Daily CT QA Phantoms. Save time and setup variability.

✓ **Better Treatment Quality**
Prevent or immediately detect virtually any CT/SIM-related NC's that can affect downstream planning, dosimetry, and delivery activities.

✓ **Integral for QA Routines**
Ensure the critical elements of the CT Simulation process (people, registration hardware, couch, external lasers, internal lasers, scanner, various software systems, and their collective coincidence) remain within established conformance parameters.

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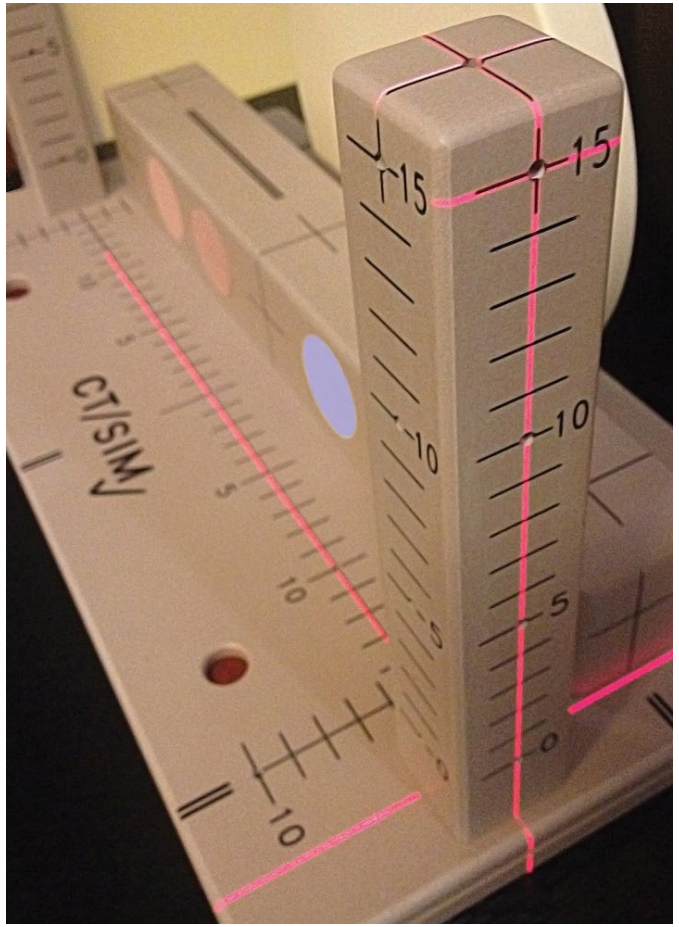
CT SIM Check

- ✓ Therapist-Friendly
  Light-weight. Reproducible. Efficient.

These tests provide the clinical team with daily metrics, acceptance of use, and long-term trending analysis.



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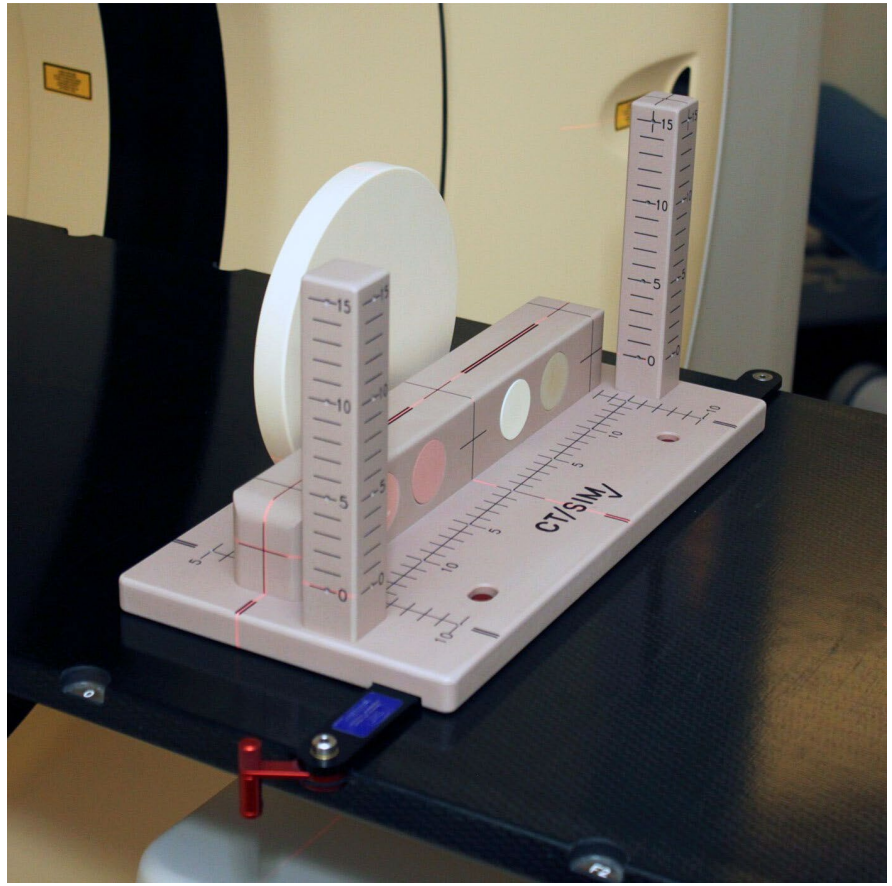
CT SIM Check

Range of Tests Include:

- *HU Constancy Checks*
- *Volume Uniformity*
- *Laser alignment in three axes*
- *Image orientation display*
- *Geometric scaling and isocenter laser localization*

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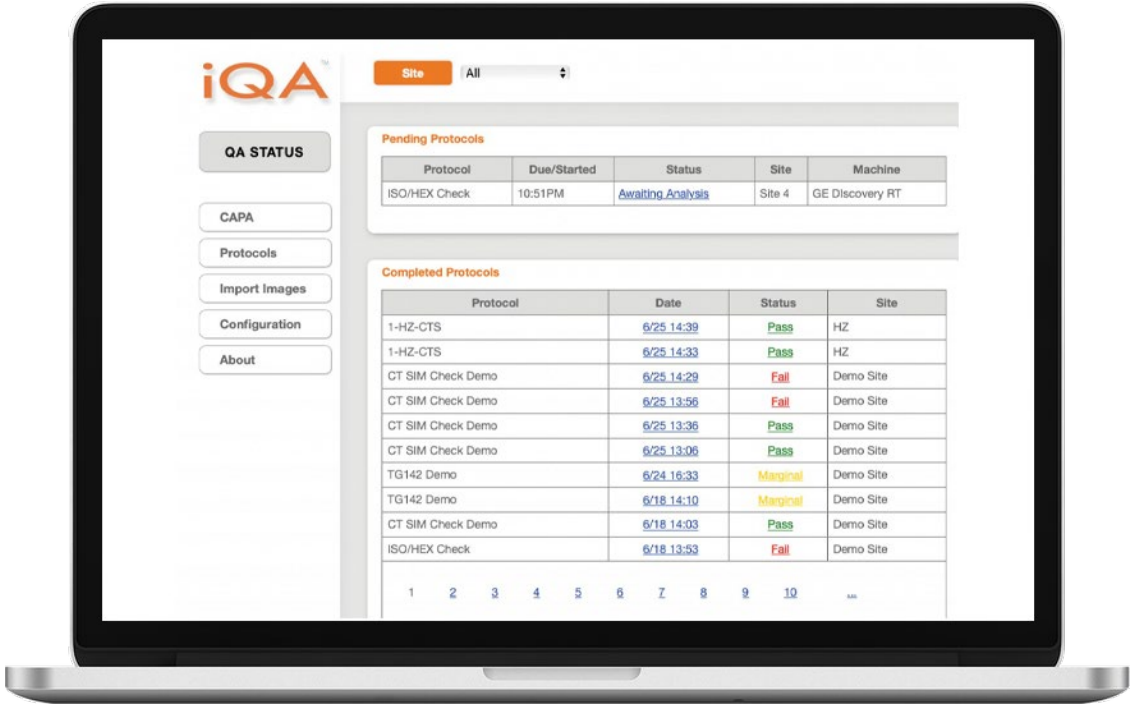
CT and MR Auto-Analysis Software

Implement and standardize routine physics QA processes and automatically analyze images and generate reports for phantoms.

✓ .



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iQA

✓ Therapist-Friendly Workflow

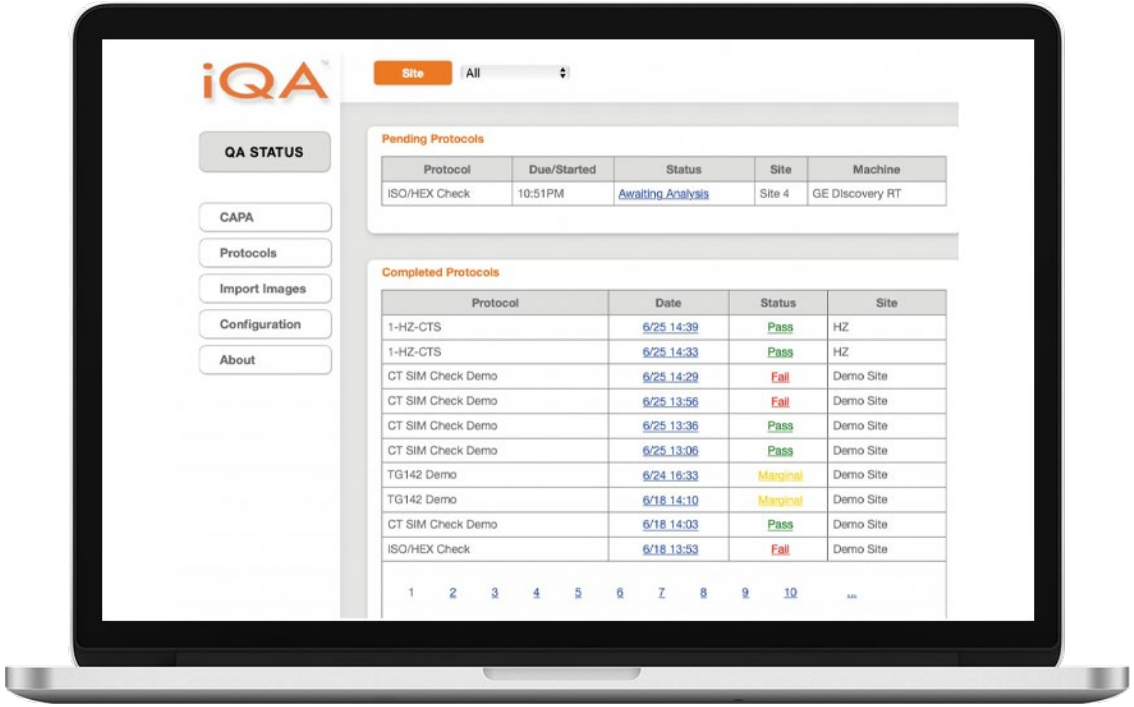
Controlled and repeatable test protocols with standardized critical measurements. It's a therapist-friendly process that effortlessly fits into your workflow. Simplified interface with step-by-step procedures.

✓ Automated Analysis

Software supports multiple sites and machines with automatic MRI distortion, daily IGRT and CT/SIM QA, administrator-defined QA analysis.

✓ Trending and Reports

View data from all sites in one location with a database that maintains historical data. Auto-generate reports and pass/fail results.



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CT SIM Check
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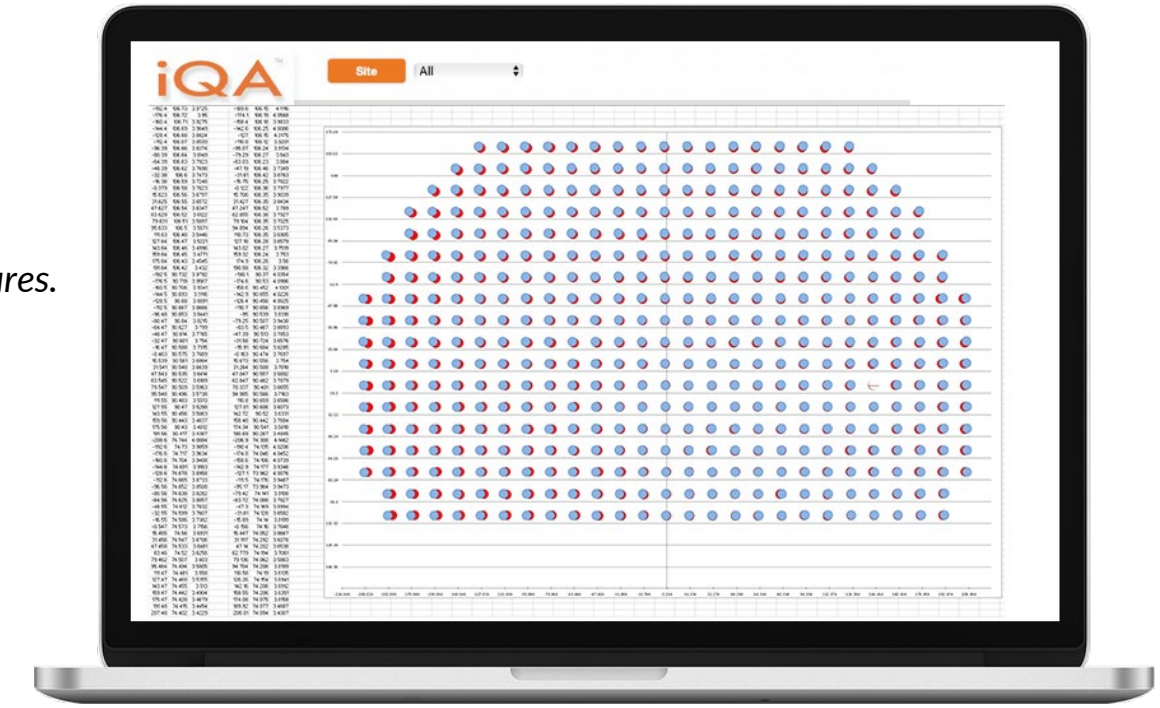
iQA

- ✓ Comprehensive, Collaborative Software

Support multiple sites and machines. Provides controlled, standardized, and repeatable QA procedures. Implement and standardize routine physics QA processes with this efficient, easy software.



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PIPSpro Software

- ✓ Most widely used imager QA program in the market
- ✓ Comprehensive filmless QA provides quantitative measurements, including SRS
- ✓ Come back to the fold - Amnesty Maintenance upgrade to latest version is a great bargain
- ✓ Comprehensive software covers TG142 requirements with single easy-to-use interface

Brochure

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QACC
QA PILOT
TG142 Check
DP1000
HOME

MONTHLY QA

STANDARD IMAGING

PIPSPRO™ SOFTWARE

OVER 30 PROCEDURES IN ONE EASY-TO-USE PLATFORM

TABLE II – MONTHLY

MECHANICAL

- Light/radiation field coincidence
- Jaw position indicators
- Cross-hair centering

TABLE III – ANNUAL

MECHANICAL

- Collimator rotation isocenter
- Gantry rotation isocenter
- Couch rotation isocenter
- Coincidence of radiation and mechanical isocenter

TABLE V – MULTILEAF COLLIMATION

WEEKLY

- Qualitative test, aka "picket fence"

MONTHLY

- Setting vs radiation field for two patterns
- Travel speed
- Leaf position accuracy

ANNUAL

- MLC transmission
- Leaf position repeatability
- MLC spoke shot
- Coincidence of light field and x-ray field
- Segmental IMRT
- Moving window IMRT

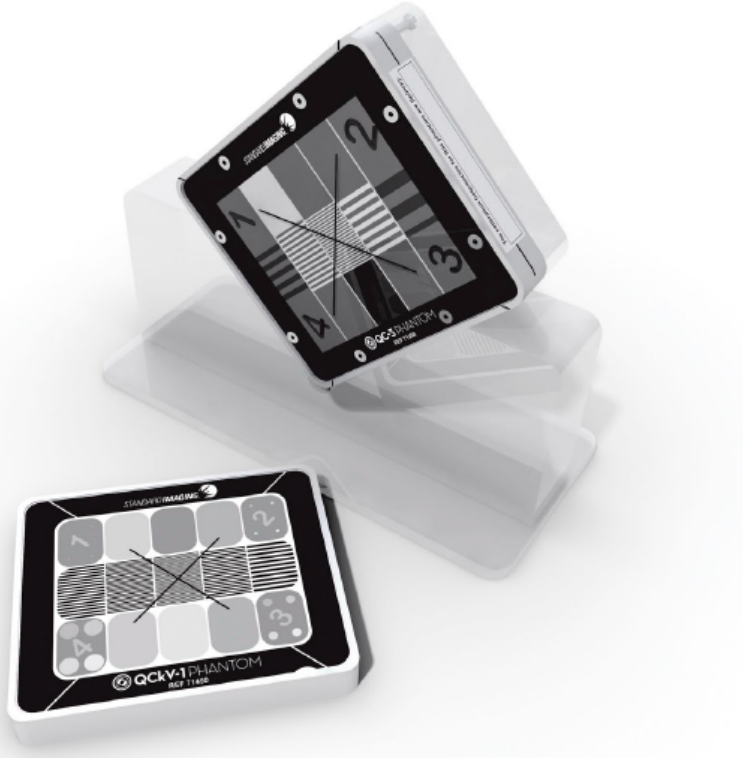
TABLE VI – IMAGING

DAILY

- **PLANAR KV AND MV (EPID) IMAGING**
  - Positioning/repositioning
  - Imaging and treatment coordinate coincidence
- **CONE-BEAM CT (KV AND MV)**
  - Imaging and treatment coordinate coincidence
  - Positioning/repositioning

MONTHLY

- **PLANAR MV IMAGING (EPID)**
  - Imaging and treatment coordinate coincidence
  - Scaling
  - Spatial resolution
  - Contrast
  - Uniformity and noise
- **PLANAR KV IMAGING**
  - Imaging and treatment coordinate coincidence
  - Scaling
  - Spatial resolution
  - Contrast
  - Uniformity and noise
- **CONE-BEAM CT (KV AND MV)**
  - Geometric distortion
  - Spatial resolution
  - Contrast
  - HU constancy
  - Uniformity and noise



RICK BAKER
PHYSICS APPLICATIONS SPECIALIST
IOWA HEALTH DES MOINES
JOHN STODDARD CANCER CENTER

"PIPSpro software and phantoms are valuable tools for streamlining over 30 of the TG-142 tests, automating data analysis, and providing documentation of the test results. By providing quantifiable and repeatable results, PIPSpro makes it easier for our center to become compliant with TG-142."

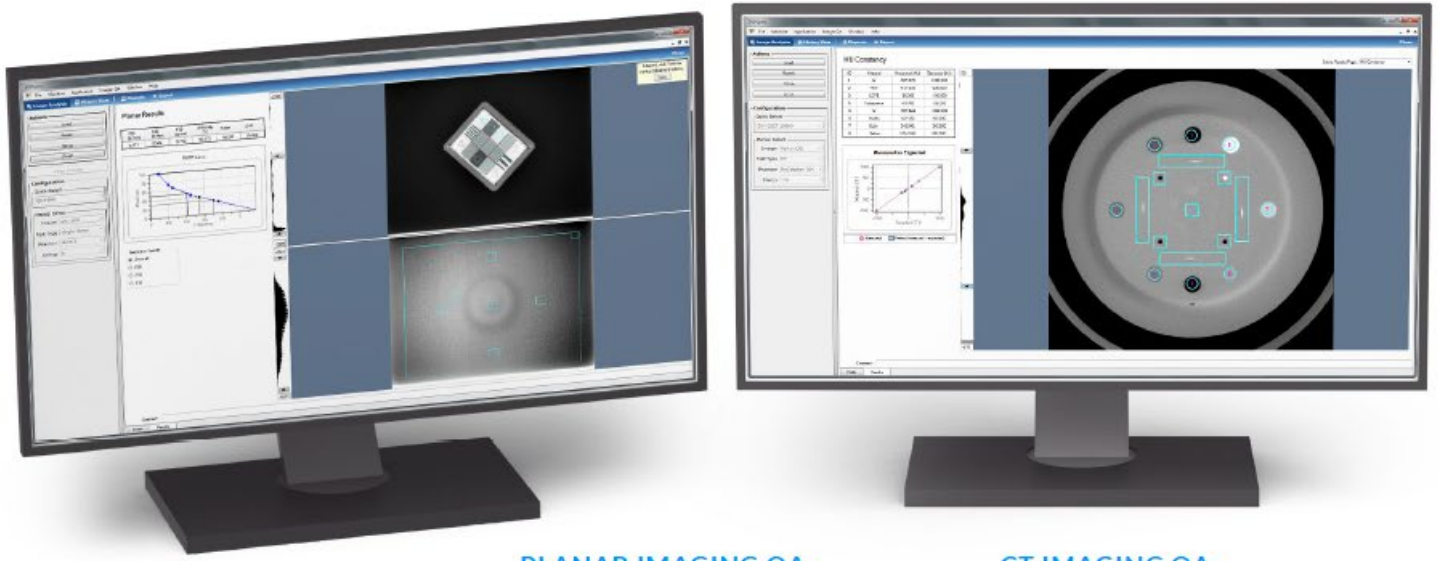
MONTHLY QA

STANDARD IMAGING

TG-142 MADE EASY

DESIGNED WITH A CONVENIENT AND OPTIMIZED WORKFLOW IN MIND

- Simple, clean and consistent user interface
- Easy-to-read reports, charts, and graphs
- PDF and comma separated variable (CSV) results export
- Multiple open modules for streamlined workflow
- Physicist-controlled editor for creating testing baselines
- Tracking and trending for test results
- Quick Selects™ for organizing tests and accessing test results
- Automatic image compositing for EPID MLC QA and StarShot images
- Centralized database for easy configuration and accessibility to results
- Complete Varian and Elekta IMRT and VMAT logfile analysis
- Workflow automation - single click deployment results
- Now includes Stereotactic collimator rotation



AUTOMATIC REGION IDENTIFICATION By automatically identifying analysis regions, subjectivity is reduced and results consistency is improved.

PLANAR IMAGING QA

PIPSpro kV planar imaging QA uses images obtained with Standard Imaging's QC-kV1 phantom or Leeds Test Objects' TOR CDR phantom. Testing is supported for kV imagers integrated with linear accelerators as well as images from ExacTrac, Cyberknife, and C-Arms. EPID MV planar imaging QA uses Standard Imaging's calibrated QC-3 phantom.

CT IMAGING QA

Using cone beam or diagnostic images obtained with any of the Catphan phantoms (503, 504, 600), PIPSpro automatically finds analysis image slices and performs required TG-142 tests (geometric distortion, spatial resolution, contrast, HU constancy, uniformity and noise). Results are colored green ("Pass"), amber ("Alert"), or red ("Fail") for easy viewing of status (this scheme is used throughout PIPSpro).

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Brochure
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MONTHLY QA

STANDARD IMAGING

MACHINE QA

QUICK, EASY, PRECISE

RADIATION LIGHT FIELD ANALYSIS

PIPSpro uses a single image taken with custom phantoms (FC-2, Center Marker) to calculate:

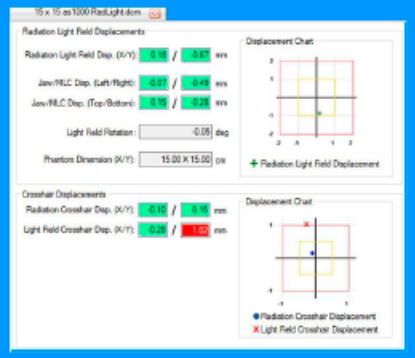
- Radiation and light field coincidence
- Radiation and crosshair displacement
- Light field and crosshair displacement
- Jaw position measurements
- Light field rotation

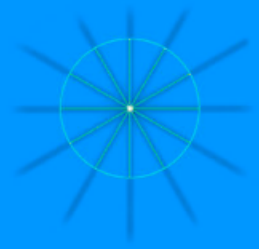
STARSHOT ANALYSIS

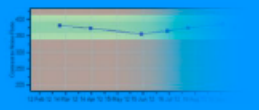
PIPSpro's StarShot module uses EPID MV or film images to measure rotational deviations in gantry, collimator, and couch mechanical isocenters. Results are expressed as the minimum diameter containing all spokes at the central point of intersection.

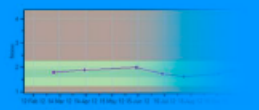
DAILY IGRT QA TRACKING

Use the Standard Imaging MIMI (Multi-Image Modality Isocentricity) phantom with image registration software to calculate known 3D (x, y, z) and 6D (add couch pitch, yaw and roll) offsets. PIPSpro allows you to record your daily offsets and track and trend your results.









WINSTON-LUTZ CUBE

QA PILOT

STEREOTACTIC 3D

Use Standard Imaging's Winston-Lutz phantom to measure the difference between the radiation isocenter and the mechanical isocenter for a linear accelerator. A number of images are taken with your portal imager using fixed angles or angles of your choice.

- Automatically load and analyze any images, including DICOM images, for cones or MLC's.
- Automatically get 2D radiation/mechanical offsets for each image.
- Automatically get an optimal 3D offset to correct patient offset errors.
- 3D analysis with x, y, z results that help you improve patient positioning.

UPLOAD RESULTS TO QA PILOT

PIPSpro QA Portal to automatically upload test results to Standard Imaging's QA Pilot QA database software

MONTHLY QA

STANDARD IMAGING

COMPLETE MLC QA

COVER ALL TG-142 MLC QA TESTS WITH EPID IMAGES AND LOGFILES

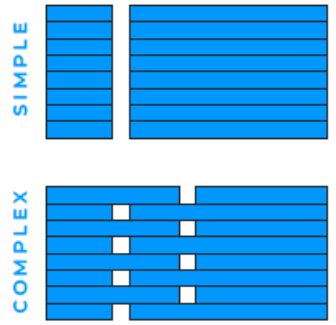
	Image-Based	Logfile-Based
Matched Segments, aka "Picket Fence"	✓	
Setting vs radiation field for two patterns (non-IMRT)	✓	
Travel speed – leaf speed loss (IMRT)*		✓
Leaf position accuracy (IMRT)		✓
Average of leaf and interleaf transmission, all energies	✓	
Leaf position repeatability*		✓
MLC spoke shot	✓	
Coincidence of light field and x-ray field, all energies	✓	
Segmental IMRT (step and shoot) test		✓
Moving window IMRT (four cardinal gantry angles)		✓

Adapted from TG-142 TABLE V: Multileaf collimation

*With logfile-based analysis, PIPSpro is the only commercial software solution able to measure quantitative leaf speed loss and leaf position repeatability.

PIPSpro MLC QA gives you actionable, quantitative results that allow you to track and trend all TG-142 requirements, delivering critical information that may indicate an impending MLC failure or indicate the need to recalibrate your machine for the best possible clinical outcomes. Step & Shoot and VMAT parameters are tested in any direction using MLC leaf pattern files (*.mlc, *.dva, *.efs).

In simple leaf speed tests, all leaves travel together



In complex leaf speed tests, every other leaf moves, maximizing inter-leaf friction

"PIPSpro is the first commercial machine QA software to determine leaf speed loss. Systems that report only maximum and mean leaf speed cannot be used to calculate leaf speed loss, as required by TG-142."

SHANNON HOLMES, PH.D.
MEDICAL PHYSICIST
STANDARD IMAGING

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PHANTOMS

QC-3 PHANTOM

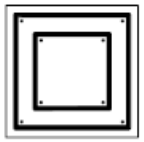
CALIBRATED PHANTOM
REF 71350

Used to test the image quality from electronic portal imaging devices (EPIDs).

QCKV-1 PHANTOM

CALIBRATED PHANTOM
REF 71451

Ideal for kV imaging systems, including Varian, Elekta, BrainLAB and Cyberknife.



FC-2 PHANTOM

REF 72187

For performing the radiation field vs. light field test and jaw position testing

CENTER MARKER PHANTOM

REF 72247

For performing the radiation field vs. light field test and jaw position testing

CATPHAN

PURCHASED THROUGH
YOUR LINAC VENDOR

Compatible with model 503, 504, 600 and 604 phantoms

> PIPSpro has streamlined our Monthly QA process. It has made the daunting tasks in TG142 manageable. We currently use it for an Elekta Synergy and image quality for our x-rays on our 3 IBA Proton treatment rooms."

BEN ROBISON
Medical Physicist
Provision Radiation Therapy

PIPSPRO SOFTWARE/COMPUTER REQUIREMENTS

Operating System	Windows® 10 Professional, 64 bit recommended
Processor	Dual Core, 1 GHz; Quad Core, 2 GHz Recommended
Memory	32-bit OS: 2 GB, 4 GB Recommended 64-bit OS: 4 GB, 8 GB Recommended
Runtime Environment	.NET 4.5.2
Hard Drive	32 GB or greater, 3 GB free space for software setup. Sufficient space to store input image and/or MLC Log files. 5 GB free space if setting up a local copy of SQL Server Express; 25% free space recommended.
Screen Resolution	1600×900 (16:9) or higher, 16-bit HiColor or greater
Optical Drive	Digital Versatile Disc (DVD)
Virtual Machines	Must support WMI (Windows Management Instrumentation)
Database Management	SQL Server 2014 minimum recommended
Connectivity	IPv4 LAN, 100 Mbit/s or greater

Windows® is a registered trademark of Microsoft Corporation.

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QA Cross Checker

- ✓ Comprehensive beam verification and analysis
- ✓ Provides energy, output and profile constancy in a single measurement for each energy
- ✓ High quality, consistent inline/crossline profile measurements required by TG-142
- ✓ Pairs with included software for lightning fast reports

Brochure

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STANDARD IMAGING

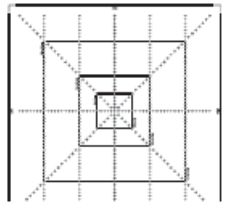
QA CROSSCHECKER

EFFICIENT & RELIABLE MACHINE QA

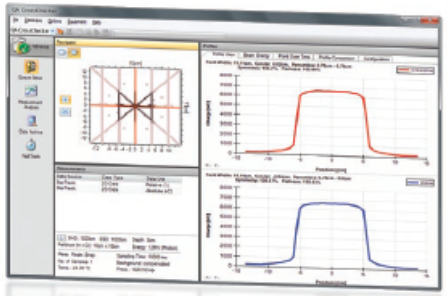
Comprehensive beam verification and analysis

QA CrossChecker provides the perfect solution for beam and machine verification — without the hassle of large phantoms. Coupled with powerful software, the QA CrossChecker is accurate to within 0.5% of a traditional water phantom, making it the easiest way to verify beam output.

With a powerful interface and a host of customizable components, the QA CrossChecker software is an essential tool for comprehensive machine verification and workflow optimization. Quickly perform all of your daily, weekly or monthly checks via seamless, pre-defined queues and protocols.



453 air-vented pixel ionization chambers



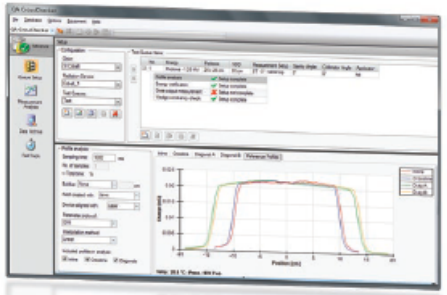
Optimized Detector Positioning for Key Linac QA Routine

453 air-vented pixel ionization chambers with optimized 5 mm spacing allows for accurate machine QA including dosimetric, mechanical, gating and MLC performance testing. Parallel readout from independent electrometers allows for fast measurements.

Water Phantom Free

Compare results to water phantom baselines and achieve accuracy within 0.5%. Perform accurate monthly machine QA without the hassle of a water phantom.

Optional Gantry Holders
Mount detector and build-up plates to the gantry head



Only One Delivery Required

Capture and analyze all parameters with just a single beam delivery, allowing for quick and detailed measurements of constancy, as well as flatness and symmetry along all four axes (in-plane, cross-plane, and diagonals). QA CrossChecker is designed to achieve fast and efficient workflow. Set up and record your measurement geometry, queues and analysis protocols once. A fast and efficient design ensures only one-time setup of measurement geometry, queues, and analysis protocols.

Pair with Software for Lightning Fast Reports

QA CrossChecker automatically compares energy measurements with their corresponding reference values. Test reports are created according to user-defined tolerances, and include reference values, allowing you to easily identify changes in your machine.

Real-Time Measurements and Analysis

Execute pre-defined queues with consecutive measurement and analysis of:

- CAX field width and penumbra
- Symmetry, flatness and wedge check
- Dose output and energy verification
- Inline, crossline, and diagonal profiles
- Light-field vs. radiation-field check

Tolerances can be set by manual input reference measurements.

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Brochure 1 of 2

MONTHLY QA

STANDARD IMAGING

FEATURES

Fast, Real-Time Measurements & Analysis

- Efficient execution of pre-defined queues and simultaneous measurement capability results in analysis of: field width and penumbra, flatness and wedge check, beam center, light-radiation field coincidence, dose output and energy verification.
- Full MLC test verification including positioning, picket fence and leaf speed.

Automated Archiving

- Automatic database storage ensures data integrity and enables advanced sorting, grouping, and filtering.

Customizable Interface

- Customizable measurement settings allow for creation of unique templates and data analysis with user-specified tolerances or reference measurements comparison.

Robust Reporting

- Automatically compare measurement sets of each energy with the reference values.
- Generate test reports based on chosen pass/fail criteria and reference values.
- Quickly print all measured and archived data.

Easy Data Collection & Comparison

- Easily compare data with dedicated trend analysis via the simplified yet comprehensive interface.
- Print single reports for all or individual measured parameters.
- Unique SQL database reporting allows for long term trending analysis.

Optional Gantry Holders & Build-Up Plates

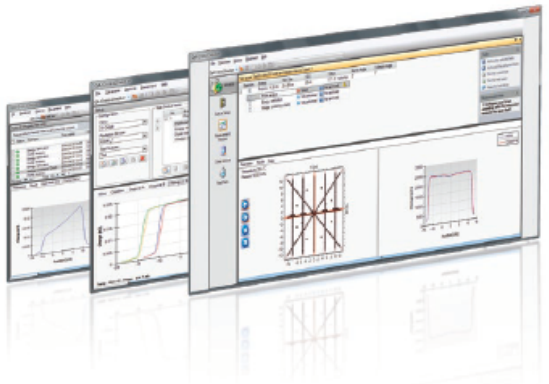
- Easy to attach gantry holders enable precise and rigid mounting.
- Various build-up plates available for verification of all linac energies.

Optimized Data Collection

- 40 X 40 cm field measurement (with 76 cm SSD gantry mount).
- Parallel readout from independent electrometers.

Versatile Verification Plates

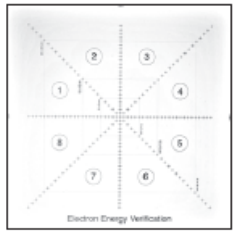
- Optional energy constancy verification plates allow for measurement of electron and photon beams.



Seamless Energy Constancy Verification Plates

Accompanying software automatically compares measurement sets of each energy with the corresponding set of reference values. A test report is created to track chosen pass/fail criteria and reference values.

- Electron beams from 4 to 22 MeV
- Photon beams of any energy from Co60 to 25 MV



View Data in Graphical or Tabular Format

Automated archiving in a database with advanced search functions for grouping, filtering and sorting. Easily compare and trend using a simple, yet comprehensive interface. Print out measured and archived data, and generate comprehensive test reports based on the user-defined tolerance levels and reference values. You can also print out measured and archived data for a single test or an entire data set.

Customizable Interface

Create unique templates and data analysis routines. Compare results to reference measurements or user-defined tolerances for data specific to your clinic. Use Free Measurement Mode for fast checks and in-depth beam steering in real time.

QA CROSSCHECKER SPECIFICATIONS

Photons	^{60}Co to 25 MV
Electrons	4 to 22 MeV

ION CHAMBER

Diameter	3 mm
Height	4 mm
Volume	0.035 cm^3
In-plane Resolution	5 mm
Cross-plane Resolution	5 mm
Diagonal Resolution	7 mm

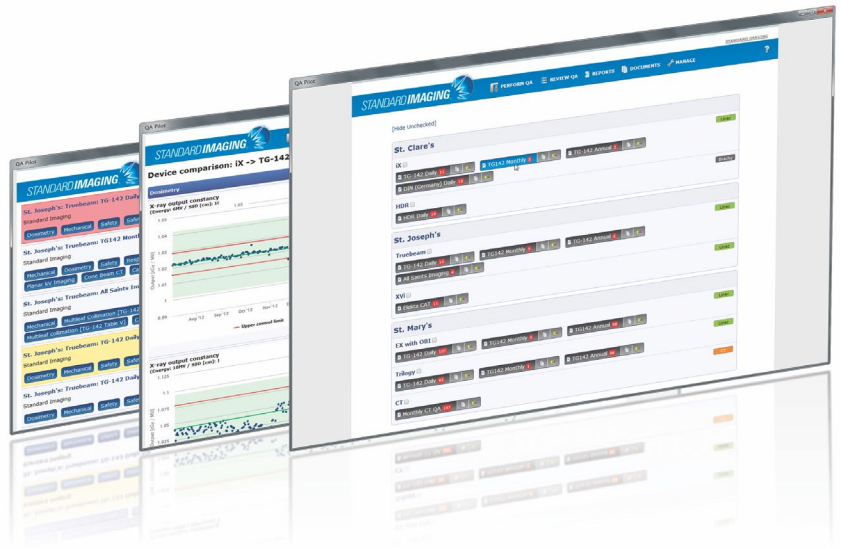
SOFTWARE SPECIFICATIONS

Operating system	Windows Vista® Windows® 7
Processor	Pentium® (or equivalent), 1.8 GHz or better
Memory	2 GB RAM or greater
Hard Drive	6 MB available, 40 GB for data archiving
Screen resolution	1024 x 768 or higher
Ports	Available Ethernet required

QA Pilot Software

- ✓ The only *QA vendor-neutral* QA data hub on the market
- ✓ All your QA tests and scheduling in one place
- ✓ Comprehensive departmental, audit and process improvement management tools.
- ✓ Secure, cloud-based access to data from anywhere with an internet connection

Brochure



PIPSpro

QACC

DV1D

TG142 Check

DP1000

HOME

STANDARD IMAGING

QA PILOT

A NEW WAY TO VIEW QA

An integrated platform to centralize and manage machine and QA performance.

ALL CLINICS ARE TASKED WITH RECORDING, REPORTING AND ARCHIVING vast amounts of data to document machine performance for accreditation and auditing. QA Pilot makes these tasks more manageable. No more spreadsheets or multiple program management. Instead, with QA Pilot you can access and manage all of your QA data in real time from one secure, unified location anywhere internet is available, with any web-capable device.

QA Pilot's simple dashboard views create a fast and easy way to keep track of all machine QA. Collect, compare, report, analyze and share data from a number of linacs, systems, and users. Automatically import data from commonly used QA devices, or enter data with convenient drop-down menus and auto-populated fields. All data entries and edits are date/time stamped in a consolidated database, making collaboration across multiple sites a breeze. Implement daily, monthly and yearly reports for the protocol of your choice, such as TG-142, so you can easily keep track of your linac QA and ensure all equipment is in tolerance. QA Pilot is ACR, DVN, and JCAHO compliant.

"I can gather and manage all my QA data and documents in one place and I'm not limited to one particular QA vendor so I can use different QA devices across multiple facilities. The really exciting thing about this cloud-based solution is the future directions of radiation therapy QA for data management and decision making."

Todd Pawlicki, Ph.D.
Chief of Physics

A NEW WAY TO VIEW QA

QA Pilot is a QA management system developed with workflows for QA protocols, such as TG-142, in mind

Record data for ALL tests in TG-142 protocol	✓
Trend results with TG-142 or custom specifications	✓
Automatic e-mail alert notifications when tolerances are exceeded	✓
Longitudinal and distribution plots for all numerical data	✓
HIPPA/HITECH compliant network	✓
Retrieve data automatically from multiple common daily QA devices	✓
Build new protocols with provided templates	✓
Accessible from any internet connected device	✓
Access data from multiple devices with single license	✓
SaaS (Software as a Service)	✓
Capital expenditure	NONE
Software installation	NONE
Store calibration documentation with specific QA devices	✓
Manage QA equipment across your organization	✓
Complete control of users viewing and entering QA tasks per department or network	✓
Save and resume in progress QA activities	✓

QA PILOT
QA PILOT
HOME
Brochure 1 of 3

MONTHLY QA

STANDARD IMAGING

QA PILOT

- Schedules
- Review
- Reports
- Analysis
- Manage
- Help

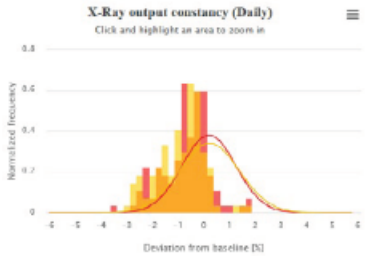
QA PILOT

HOME

Brochure 2 of 3

PERFORM QA

Access your data from any internet enabled device, including mobile. View the dashboard report, manage equipment tolerance, receive push notifications and communicate with responsible staff.



QA Your Way

QA Pilot's interface is very flexible, letting you create the tool that's right for you. Control visibility and actions for sites, linacs, users, and especially QA templates and reports. You can also import previous databases to fully integrate and retain QA history, and show or hide historical data deviations from baseline.

QA Pilot lets you create completely new tests, test groups and protocols that can be used for new technologies and the customized requirements of your facilities.

Plus, save time with the ability to copy and paste QA templates, organize custom tests by machine type, and create baseline values from a report to designate important data points.

Vendor Neutral Compatibility

Connect directly to Standard Imaging equipment used for TG-142 QA, or protocol of your choice. You can also import data seamlessly from other vendors unifying all your QA products providing vendor neutral data collection for automated integration.

Direct Connect

Data is collected automatically from supported devices, such as the QA BeamChecker Plus and PIPSpro Software.

REVIEW QA

Easy-to-read overview of machine QA workflow with actionable data

Review QA

Filter by:

- Site - | - Type -

Search:

Site	Machine	Type	Status	Date	Comments	Signed
St. Clare's	EX with OBI	TG-142 Daily	Fail	2015-04-20 09:55:32 EDT		
St. Joseph's	Truebeam	TG-142 Daily 6	In progress	2015-04-10 12:16:16 EDT		
St. Joseph's	Truebeam	TG-142 Monthly 2	Pass	2015-03-25 15:09:40 EDT		
St. Clare's	EX with OBI	TG-142 Annual	Pass	2015-03-25 11:24:35 EDT		
St. Mary's	IX	Daily QA 53	Pass	2015-02-19 08:48:33 EST		Y

Powerful QA Workflow with Document Sign Off

Workflow actions are stored and easily accessible to clinicians and administrators for seamless communication. Implement document signoff requirements from one or more individuals or roles. You can set deadlines for signoffs with automatic email alerts sent to the appropriate individuals.

Real-Time Performance Monitoring and Email Alerts

Get an at-a-glance overview of all your machines with the ability to see reported data. Instant out-of-tolerance email alerts and easily identifiable notifications help you respond before errors become clinically relevant.

Date	Name	Type	Tags	Version
17 Feb 2015	TG142 Procedures	Procedure	TG142	1.2

Document Manager

Store legacy QA data and calibrations; control and keep procedures with a built in Document Repository.

Document Management Asset Accreditation

Store and manage your QA and certification related materials. Upload version-controlled files effortlessly from anywhere in your organization, ensuring current versions of policies and procedures are available during inspections. Assign documents for review by creating due dates, sign off and restrictions for select personnel.

MONTHLY QA

STANDARD IMAGING

QA REPORTING

Powerful QA reports & trending for a fast, easy way to keep track of all linac QA

Customizable Interface

Create baseline and tolerances and then compare at a glance across all QA devices.

Historical Trends

All numerical measurements can be trended over time with a customized view that can be set by date or energy. Tolerance and alert limits can also be displayed on the plots to easily view changes in data over time.

Equipment Manager

Upload and store all relevant documents associated with calibrations and apply calibration factors automatically to your data when appropriate. Reminders can be set up to ensure you're reminded when calibration on your equipment is due for recalibration.

WHY QA PILOT?

QA data in the cloud is secure, easy to manage and optimized for mobile devices

QA DATA IN THE CLOUD

Security
provides data encryption and backup

Convenience
installation free with easy access anywhere

Accountability
peer-to-peer review with secure collaboration

No Maintenance Required

Software as a Service (SaaS) platform means:

- No software installation/management necessary
- Only internet access is required
- No internal in-house servers or IT support needed

Easy Calibration Management

No more searching for calibration documents. QA Pilot allows you to store calibration information and documents for your devices. Reminders will alert you of pending calibration expirations.

Secure Data

Data is securely stored, double encrypted and password protected on Amazon servers, meeting all HIPAA and EU compliance standards. To comply with ACR, DVN, and JCAHO requirements, all entries and edits are date/time stamped.

Mobile Optimized

Access from a mobile enabled device for dashboard reports, manage equipment tolerances, receive push notifications, and communicate with responsible staff.

IMPROVE CLINIC OPERATIONS

HOW DOES QA PILOT IMPROVE SAFETY?

- At-a-glance analysis and status of all required tests and machine performance
- Be notified immediately when a machine is out of tolerance
- World class data integrity with HIPAA Compliant Amazon Servers, securing all your data

HOW DOES QA PILOT MAKE MY CLINIC MORE EFFICIENT?

- See how your clinic compares to others with similar machines with distribution plotting
- Easily store and produce all reports on-demand for the ACR and other regulatory agencies
- Easy to use, browser based software, connecting all your clinics/machines together
- Assignable user rights allowing you t ow up on non-compliance

QA PILOT

HOME

Brochure 3 of 3

DoseView 1D

- ✓ Easy 3 point leveling
- ✓ Automatic, Customizable Data collection with included DV1D software
- ✓ 0.05 mm accuracy for consistent QA

QA PILOT

PIPSpro

TG142 Check

QACC

DP1000

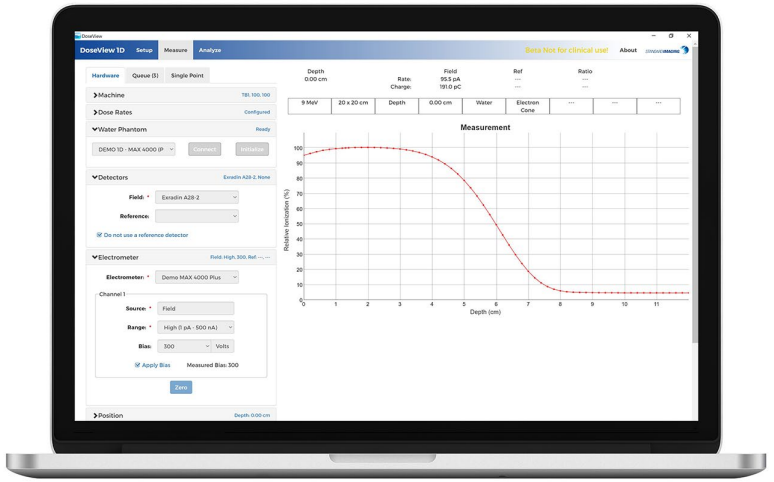
Brochure

HOME

DoseView 1D: 1D and 3D Scan Integration

Automatic 1D Scanning Routines with DoseView 1D Software

Fully automate depth scan data collection with DoseView 1D and the SuperMAX™ or MAX 4000 Electrometers.



WORKS WITH

STANDARD IMAGING QA PILOT™

Elekta Elekta® AQUA™

QA PILOT

PIPSpro

TG142 Check

QACC

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STANDARD IMAGING

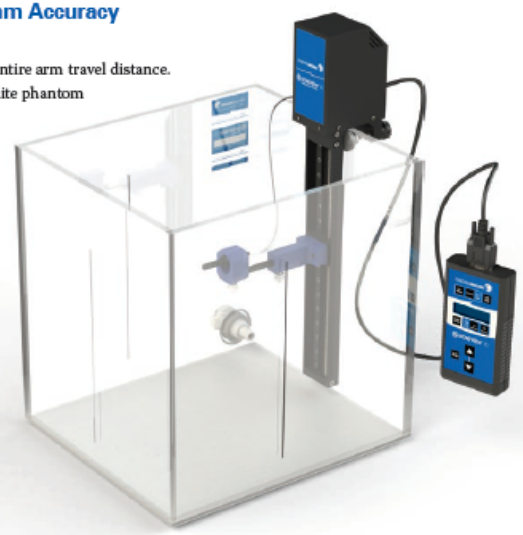
DOSEVIEW™ 1D

AUTOMATE ABSORBED DOSE TO WATER MEASUREMENTS

Automatically acquire depth-dose measurements in a durable, TG-51 and TRS-398 compliant 1D water scanning system.

Design Ensures 0.05 mm Accuracy and Repeatable Scans

- 0.05 mm precision over the entire arm travel distance.
- Engraved vertical lines expedite phantom alignment with room lasers.
- Two fill lines accommodate 20 cm and 25 cm depth measurements.



Easily Adapts to Fit Range of Detectors

- The water equivalent ion chamber bracket fits most thimble ion chambers and rigid stem parallel plate chambers.
- Alignment lines help quickly place the centriod of a detector at isocenter.
- Optional brackets available for vertically-oriented and stemless detectors.

Remote Operation with Handheld Controller

- Establish origin position and automatically return to origin with the press of a button.
- Three movement modes; fast, slow and step (0.01 mm to 100 mm).
- Easily toggle between cm/mm.
- Controller recalls the saved position for operation outside the vault.

AUTOMATIC 1D SCANNING ROUTINES WITH DOSEVIEW 1D SOFTWARE

Fully Automate Depth Dose Data Collection With Doseview 1D and the Supermax or Max 4000 Electrometers

- Customize step sizes.
- Automatically accounts for water settling.
- Multiple measurements at each probe position.
- Percent Depth-Dose data plotted in real-time.
- Quickly export data to a spreadsheet (.csv).
- Optional Chart displays: View rate or chart measurements plotted against depth (Table View) or time (Real-time View).
- Averaging mode: Automatic averaging of sequential readings.
- Streaming rate mode: Record unfiltered 10 hz rate readings for immediate measurement feedback.

Remote Operation of Scanning Arm

- View detector depth in real-time.
- Set/move to origin.
- Move to specific depth.
- Step probe by customizable distance.

Operate Electrometers (SuperMAX/MAX 4000) via Software

- View rate/charge measurement data in real-time.
- Set range and bias voltage.
- Perform charge collection using all modes. (timed + repeating, continuous, triggered)
- Automatic recording of data.

HOME

Brochure
1 of 2

STANDARD IMAGING

DV1
D

HOME

Brochure
2 of 2

ADDITIONAL ACCESSORIES

EXRADIN Ion Chambers

- Inherently waterproof
- Fully guarded for uniform field line measurements
- Constructed of rugged, homogeneous, conductive plastic for years of durability
- Manufactured from Shonka air equivalent and tissue equivalent plastics
- 5 year warranty

1 mm Lead Foil

- Absorb electrons according to TG-51 procedures
- Easily slide inside wedge tray or tape to collimator
- 20 cm x 20 cm x 1 mm
- Protective coating provides rigid strength to lead

SuperMAX Electrometer

- Two independent measurement channels for ratio-based acquisition
- Easy-to-use touch-screen interface
- Comprehensive chamber library
- 5 year warranty

DOSEVIEW 1D SPECIFICATIONS

DIMENSIONS

1D SCANNING ARM	*Height:* 48.26 cm (19.0 in) (2.67 in) *Length:* 9.44 cm (3.72 in)	*Width:* 6.77 cm
WATER TANK REF 91800	*Height:* 36 cm (14.17 in) (11.81 in) *Length:* 34 cm (13.39 in)	*Width:* 30 cm
WATER TANK REF 91810	*Height:* 36 cm (14.17 in) (15.75 in) *Length:* 42 cm (16.54 in)	*Width:* 40 cm

WATER TANK MATERIAL Clear acrylic 0.95 cm (0.375 in)

WEIGHT

1D SCANNING ARM	1.36 kg (3 lbs)
HANDHELD CONTROLLER	0.23 kg (0.5 lbs)
WATER TANK *(REF 91800, empty)*	6.35 kg (14 lbs)
WATER TANK *(REF 91810, empty)*	10.43 kg (23 lbs)

MAX SCANNING ARM TRAVEL 27.5 cm (10.8 in)

IONIZATION CHAMBER HOLDER DIAMETER ACCOMMODATION

Max: 20 mm (0.79 in) *Min:* 6 mm (0.24 in)

BACKSCATTER CLEARANCE AT 25 CM DEPTH

~ 8 cm (3.1 in) including phantom base

ACCURACY OF POSITION ± 0.05 mm (0.002 in) over entire 275.00 mm

REPEATABILITY OF POSITION ± 0.05 mm (0.002 in) over entire 275.00 mm

OPERATING CONDITIONS

PRESSURE	680 – 800 mm Hg
TEMPERATURE	10 – 40 °C
RELATIVE HUMIDITY	30 to 75%, non-condensing

STORAGE CONDITIONS

TEMPERATURE	-40 to 70 °C
RELATIVE HUMIDITY	0 to 95%, non-condensing

CABLING 100 ft extension cable provided (standard RS-232 configuration)

POWER REQUIREMENTS AC OUTPUT 12 VDC @ 1.25 A

OPTIONAL DETECTOR BRACKETS

- PTW Markus® (REF 70850)
- PTW Roos® (REF 70852)
- Vertical Diode Holder (REF 70851)

CONFORMITY CE

SOFTWARE REQUIREMENTS

Operating System	Windows Vista® Windows® 7
Connectivity	9-pin, RS-232 serial port or USB port with USB to RS-232 adapter

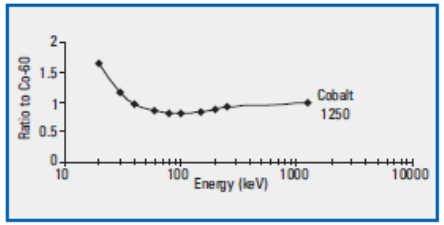
Markus and Roos are registered trademarks of PTW Freiburg GmbH. Specifications subject to change without notice.

EXRADIN A11 ION CHAMBER

The Exradin Advantage

Waterproof A11 Roos®-type chamber may be operated while fully submerged without any protective sheath; ideal for repeated TG-51/TRS-398 dose distribution measurements in a water phantom.

- Waterproof construction eliminates the need for sleeves or protective coatings.
- Chamber vents through a flexible tube surrounding the triaxial cable; ideal for use in water or plastic phantoms.
- Excellent inherent conductivity negates the need for coatings found in other chambers, which can flake off and require careful handling.
- Collection efficiencies of 99.9% or greater.
- Exradin detectors feature some of the quickest settling times of any manufacturer.



TG-142 Check

✓ Mechanical

Jaw Position & Light Field Coincidence, Light Field vs Radiation Field Coincidence, ODI Verification, Table / Couch Angles, MLC Leaf Position Accuracy, and Picket Fence

✓ Output

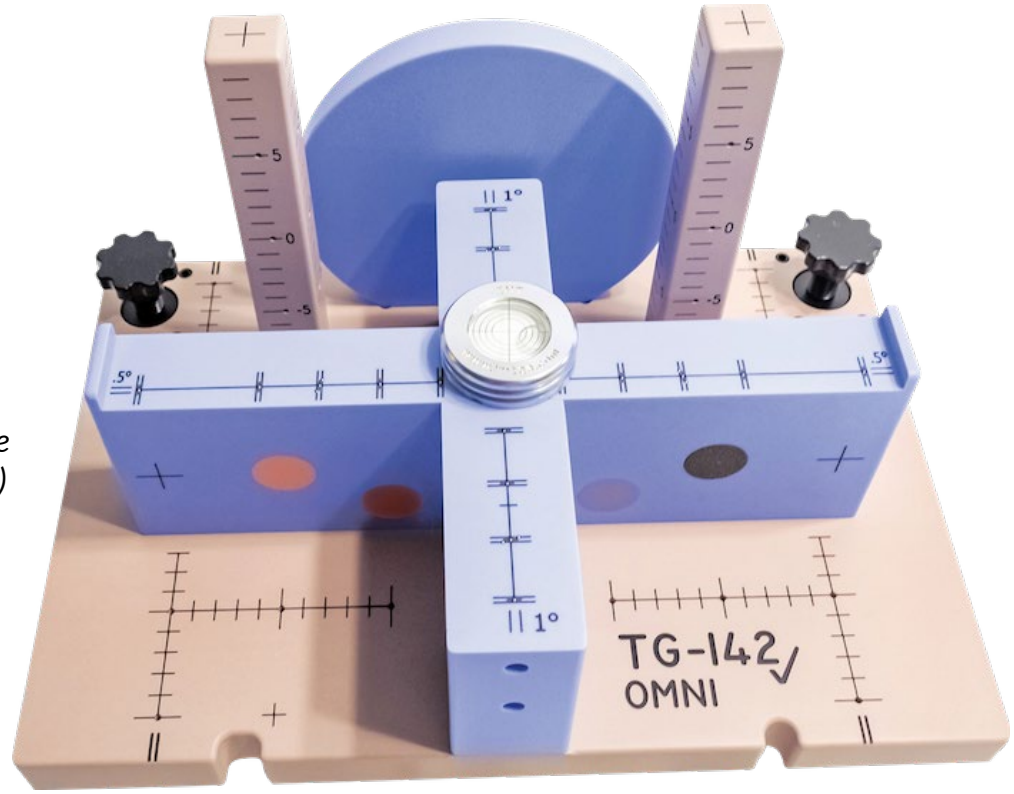
Photons & Electrons, Typical Dose Rate Output Constancy, Dynamic Wedge Constancy, Energy Constancy, and Flatness & Symmetry (Profile Constancy)

✓ MV EPID, kV Planar Imaging

Scaling, Spatial Resolution, Contrast, Noise, and Uniformity

✓ CBCT Imaging

- ✓ *HU Constancy & Contrast Visibility, Geometric Distortion, Spatial Resolution, Low Contrast Resolution, Noise, Uniformity*



QACC

PIPSpro

DP1000

QA PILOT

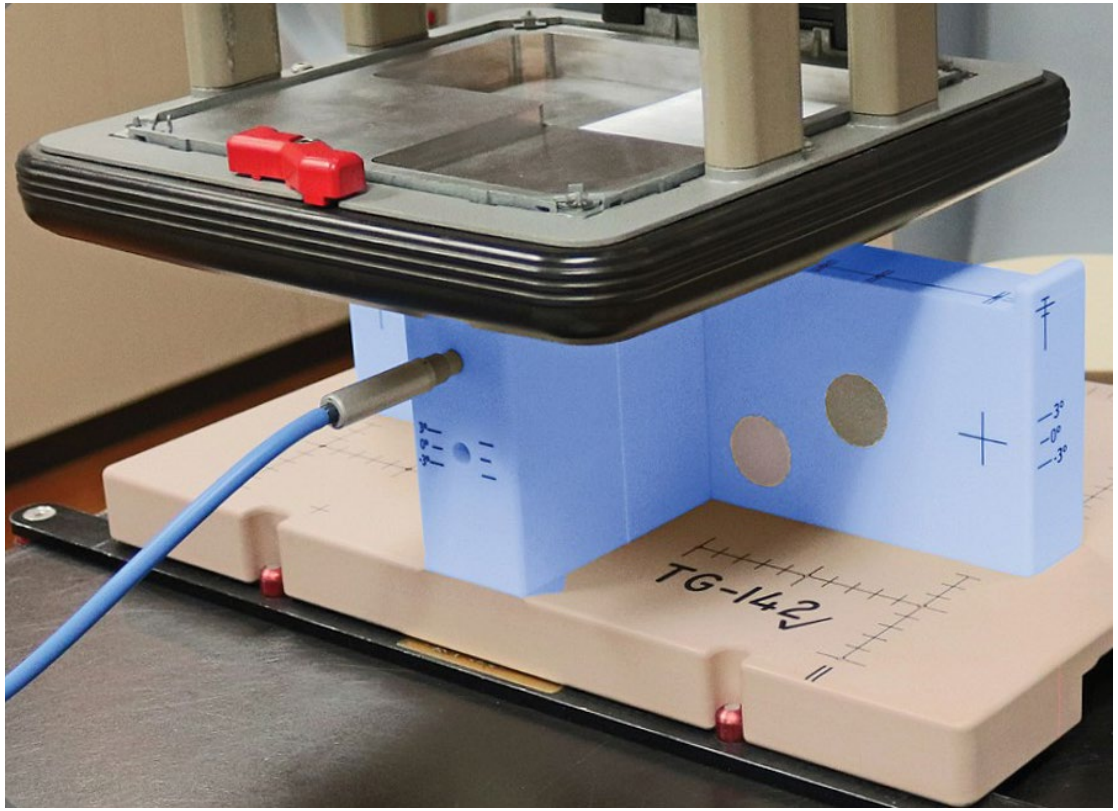
iQA

HOME

TG-142 Check

- ✓ One Phantom. Complete TG-142.

Comprehensive solution that requires only one phantom and ion chamber with minimized vault entry.



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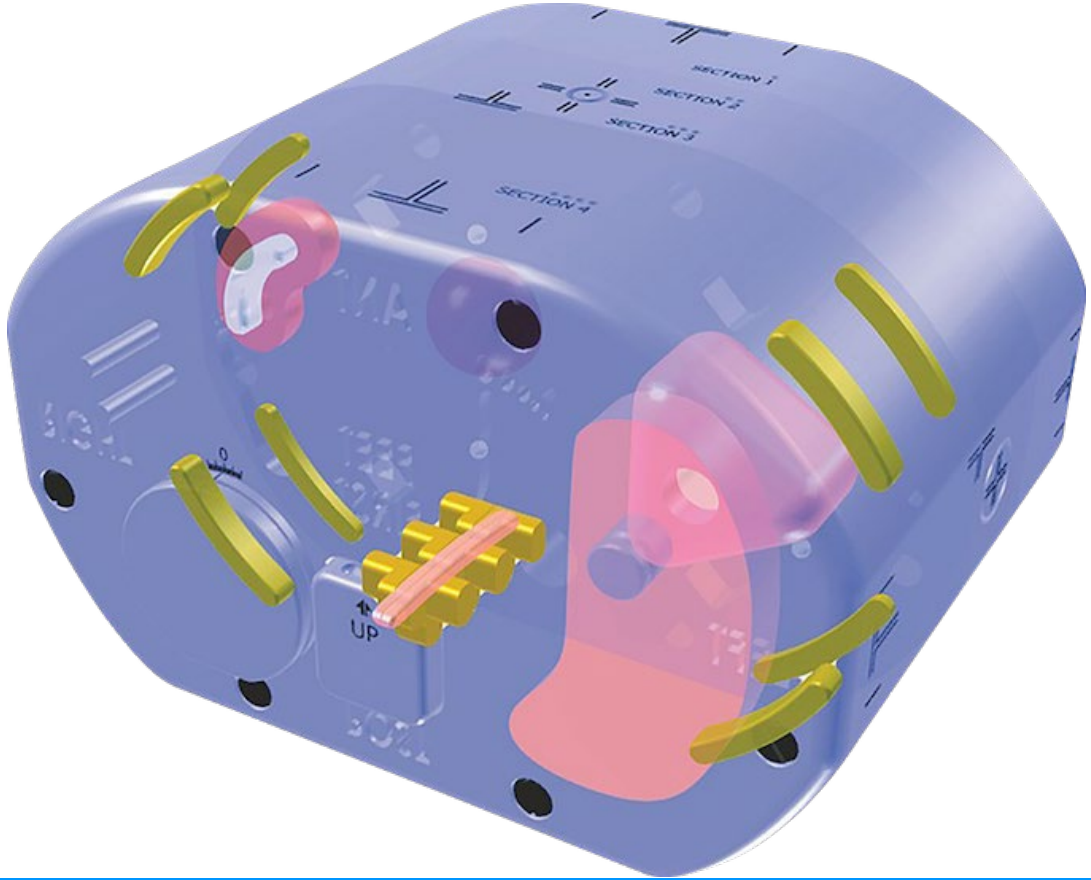
Simulation, Treatment Planning, Imaging, and Delivery
QA as recommended by TG-53, TG-66, and TG-142.



✓ Integrated Testing

4 primary modules that are assembled using rods, of a density similar to trabecular bone, around the periphery. Various internal structures and test objects as well as external engravings and fiducials are utilized for integrated testing.

✓ Pseudo-Anthropomorphic Anatomy

Ribs, Vertebrae, Spinal Cord, Lung, and Kidney.

✓ Dose Verification

Measure dose with ion chambers, film, and OSLD.

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CT/SIM QA

- *Laser Alignment and Orientation for gantry walls and ceiling*
- *CT Couch Orientation, indexing, motion, and position*
- *Slice Thickness / Profile Width and Sensitivity Profile*
- *CT Number Constancy*
- *Field Uniformity and Image Noise*
- *Spatial and Contrast Resolution*
- *Virtual SIM with Hidden Target Localization, Contouring, and Laser Movement Accuracy*

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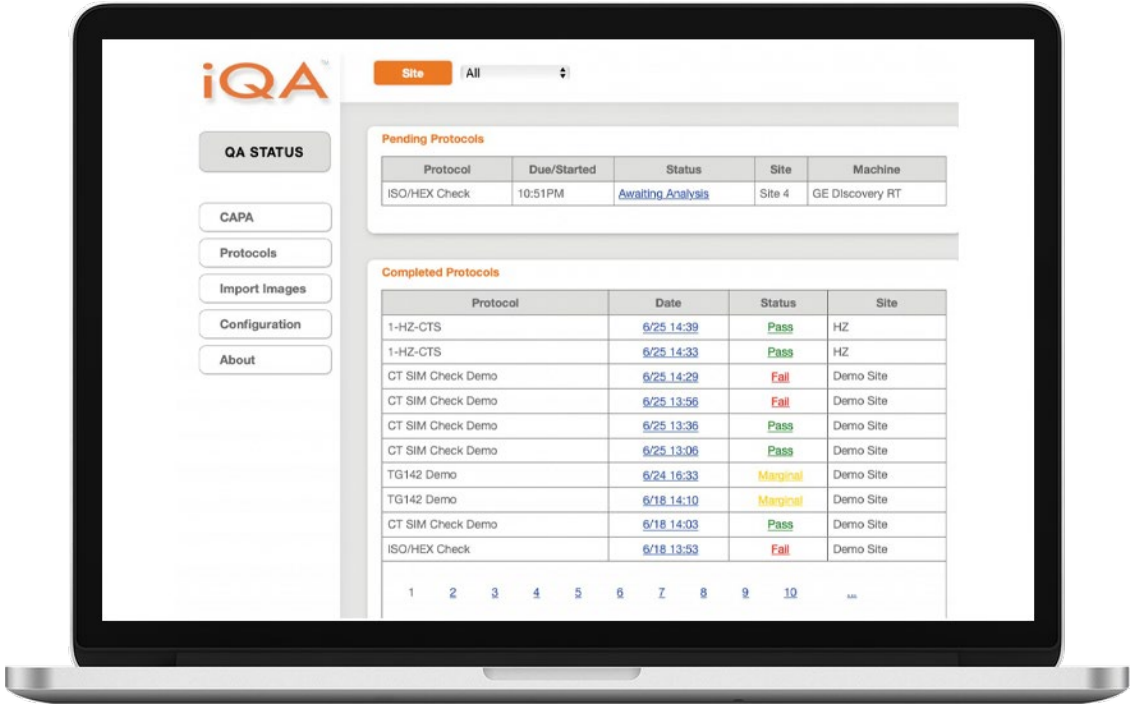
iQA

CT and MR Auto-Analysis Software

Implement and standardize routine physics QA processes and automatically analyze images and generate reports for phantoms.

✓ .



ISO Cube
QABC+
HexaCheck
MIMI
CT SIM Check
HOME

iQA

✓ Therapist-Friendly Workflow

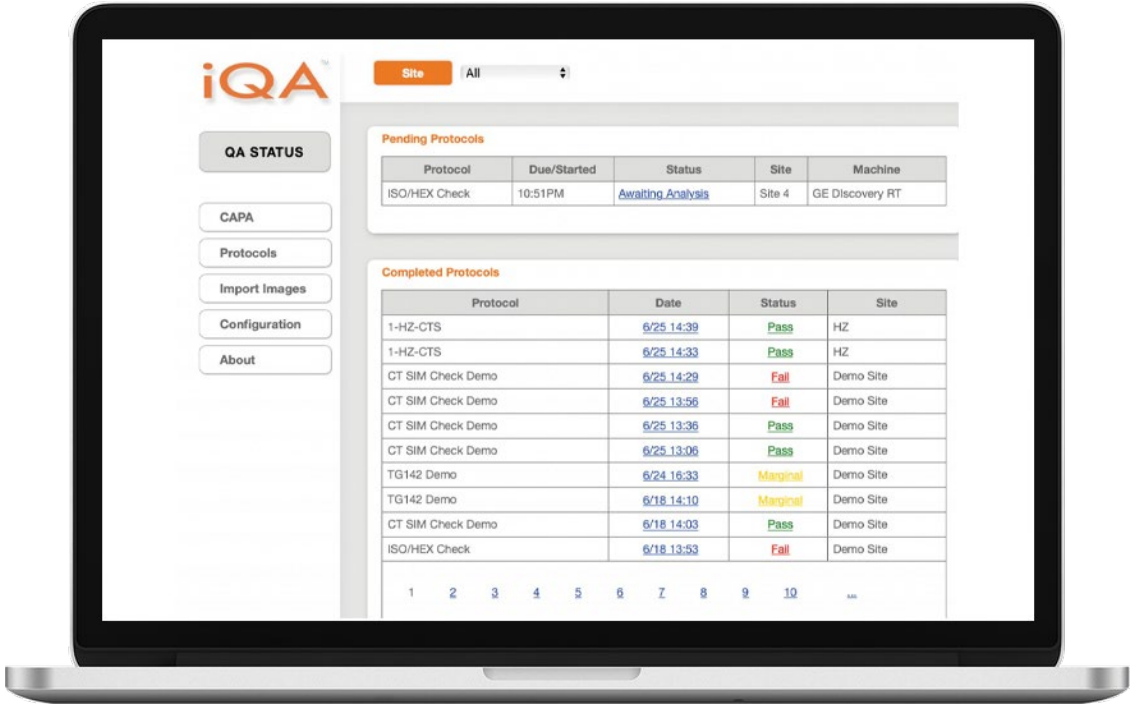
Controlled and repeatable test protocols with standardized critical measurements. It's a therapist-friendly process that effortlessly fits into your workflow. Simplified interface with step-by-step procedures.

✓ Automated Analysis

Software supports multiple sites and machines with automatic MRI distortion, daily IGRT and CT/SIM QA, administrator-defined QA analysis.

✓ Trending and Reports

View data from all sites in one location with a database that maintains historical data. Auto-generate reports and pass/fail results.

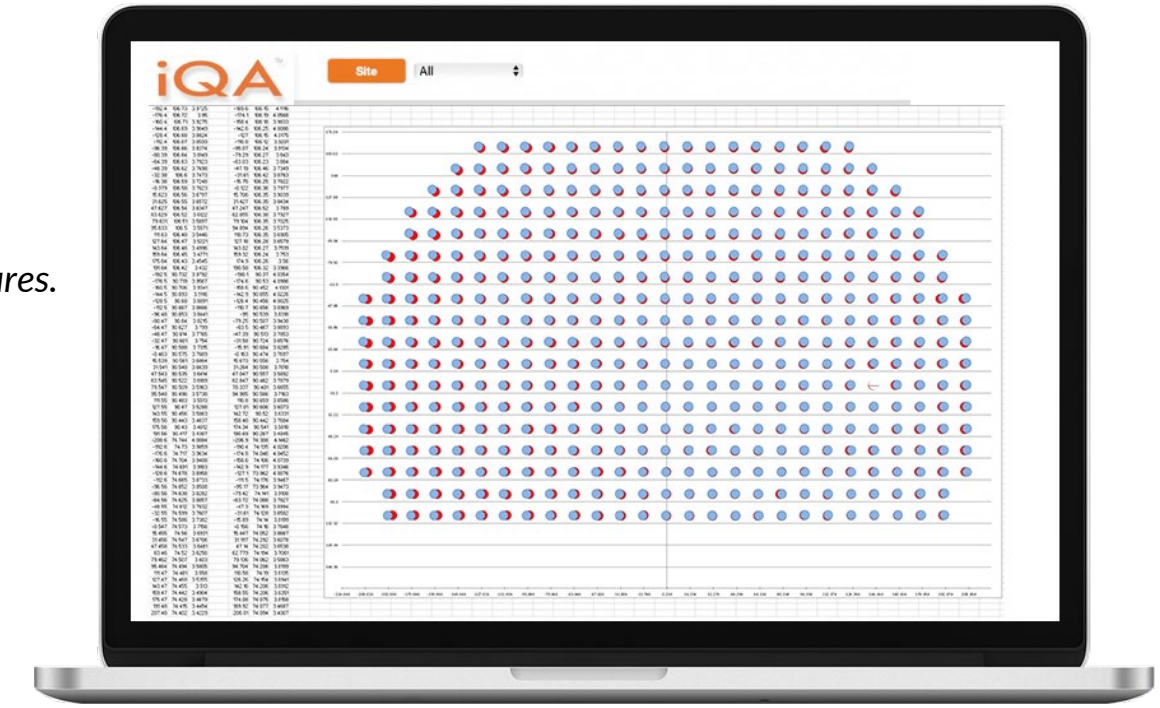


ISO Cube
QABC+
HexaCheck
MIMI
CT SIM Check
HOME

iQA

- ✓ Comprehensive, Collaborative Software

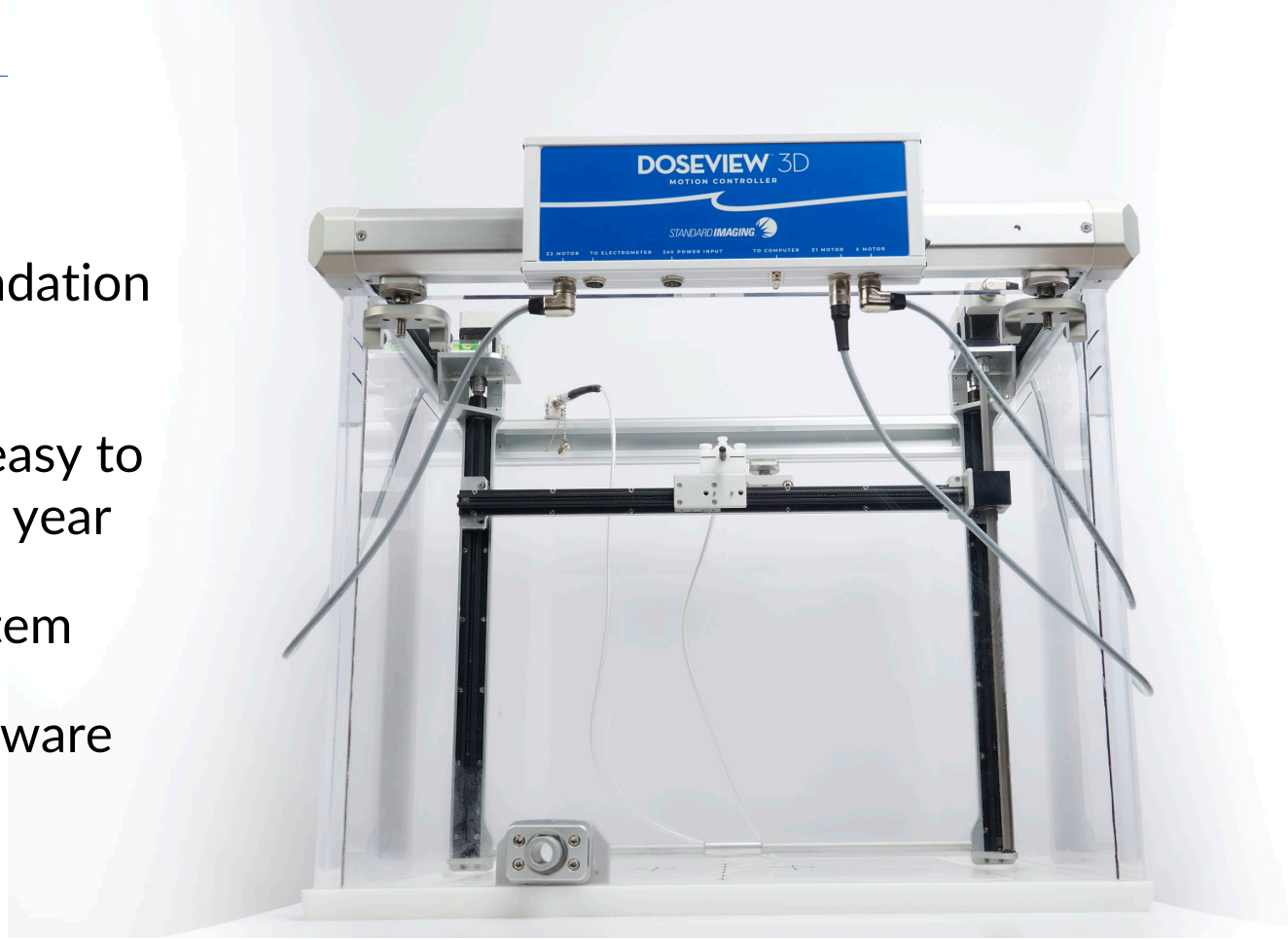
Support multiple sites and machines. Provides controlled, standardized, and repeatable QA procedures. Implement and standardize routine physics QA processes with this efficient, easy software.



ISO Cube
QABC+
HexaCheck
MIMI
CT SIM Check
HOME

DoseView 3D

- ✓ Robust construction provides foundation for better data
- ✓ Simple and fast hardware setup - easy to remember even if used just once a year
- ✓ Automatic detector alignment system
- ✓ Most intuitive water phantom software available



EXRADIN
W2
QA Pilot
DP1000

Brochure

Home

ANNUAL QA

STANDARD IMAGING

DOSEVIEW™ 3D

COMMITTED TO INNOVATION AND QUALITY PATIENT OUTCOMES

Making sure your patients have great treatments begins with a finely-tuned linac, and that starts with the DoseView 3D.

It isn't just another water phantom.

BEN ROBISON
MEDICAL PHYSICIST
PROVISION RADIATION THERAPY

"The DoseView 3D is an outstanding scanning tank. Setup is simple and easy. Hopefully you are only using your scanning tank once a year. DV3D has made the set up so simple that after 12 months of not using the tank it still feels familiar."

DV3D

HOME

Brochure 1 of 5

BETTER HARDWARE

ROBUST CONSTRUCTION PROVIDES THE FOUNDATION FOR BETTER DATA

DV3D

HOME

Brochure 2 of 5

STRONG

Manufactured with a rigid, aluminum frame and stainless steel leadscrews, the DoseView 3D provides a consistent platform for repeated QA testing. Meticulous construction ensures consistent measurement accuracy within ±0.1 mm per axis.

ACCURATE

The Cartesian coordinate system and ability to set isocenter to any point within the tank avoids rotational errors possible with cylindrical tanks.

CONVENIENT

The wireless pendant with audible and visual cues and a backlit display make configuring and controlling the DoseView 3D easy to perform and remember.

EASY

Three leveling screws are mounted above the phantom's scanning volume, making it easy to fine-tune even when the phantom is filled with water.

AUTOMATIC DETECTOR ALIGNMENT SYSTEM Swap detectors without resetting isocenter/origin with the Detector Alignment System. The system aligns the center of each detector.

SUPPORTS VARIAN® HALCYON™

ANNUAL QA

STANDARD IMAGING

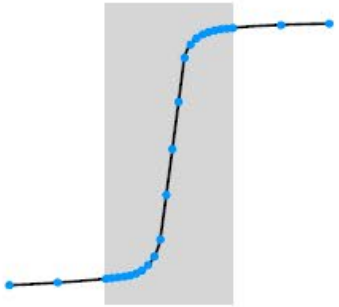
BUILT FOR ACCURACY

HIGH-SPEED ELECTROMETER

The DoseView 3D Electrometer is a dual-channel, fast-acquisition electrometer that continues Standard Imaging's renowned reputation for precision and efficiency. Bias voltage can be enabled independently per channel for chamber/diode simultaneous operation. Low noise performance helps ensure post-processing operations are kept to a minimum.

ACCURATE, RELIABLE EXRADIN ION CHAMBERS

For over 40 years, Exradin's quality has been recognized by the top research institutes and standards laboratories around the world. The DoseView 3D comes with two Exradin A28 Ion Chambers (0.125cc), producing sustained accuracy and confidence in your QA testing.



VARIABLE STEP SIZE ACQUISITION

The DoseView 3D can be programmed to move in varying step sizes throughout a scan. Implement tighter steps toward the penumbra to account for increased variability without significantly increasing overall scan time.

TIME SAVING FEATURES

EXPEDITE ACCURATE SET UP

The Automatic Detector Alignment System places the center of all detectors at the same position relative to the water's surface, allowing users to swap detectors without resetting isocenter/origins. Initial setup is performed with the crosshair alignment jig. This bracket system is compatible with Exradin Ion Chambers and supports chambers and diodes from most other manufacturers. This system ensures faster setup time and provides confidence in accurate leveling and beam center positioning.

AUTOMATICALLY FIND BEAM CENTER

Once leveling is performed, the DoseView 3D determines the center of a radiation field by locating the field edges using an ion chamber or diode. This test can be performed at multiple depths to identify any issues with system leveling and/or gantry alignment.

DV3D

HOME

Brochure 3 of 5

ANNUAL QA

STANDARD IMAGING

INCREDIBLE, ALL NEW SOFTWARE DESIGN

THE EASIEST, MOST INTUITIVE WATER PHANTOM SOFTWARE AVAILABLE

- A wireless connection to the hardware provides easy & convenient control
- Import scans from your previous water scanning systems for comparison & continuity.
- Accuracy of system setup is confirmed with automatic checks that ensure detector centering and gantry angle positioning.
- Scan queue setup and measurement is automated eliminating repetitive tasks and saving time.
- Scan speed and step size automatically optimized according to dose rate.
- Guided beam scanning performing next sequential group of measurements in queue.
- SmartSelect detects scans outside queue parameters and automatically deselects them.
- Simple, yet powerful scan queue creation and editing.
- Easy export to TPS and CSV

DV3D

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QUEUES

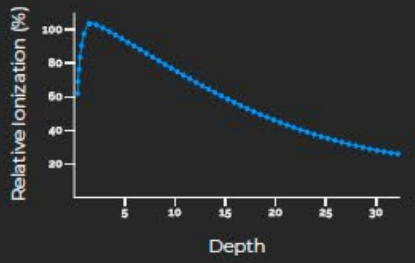
A queue creation wizard helps you choose your scanning modality (photons, electrons or flattening filter free photons), modifiers, energies, field sizes and scan types. All combinations of your choices are created. No copying and editing individual scan groups. Make your scan queues in a matter of minutes...or less. Continuous scanning and multiple scan zones are available at no extra cost.

SETUP

The Measure page has a setup wizard that takes you through the process of getting your tank ready to use. When all expander title bars have results in blue, you are ready to scan.

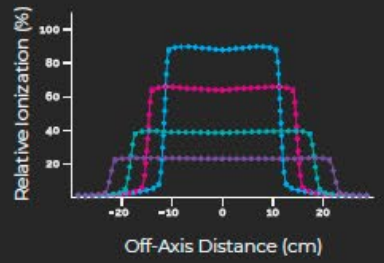
MEASURE

Scan queues are loaded into a queue runner. As scan data is acquired, it is immediately stored in a database for future access, analysis, and export. Raw scan data and the methods used to modify it are stored in the database, so you always know what your raw data looked like and always know how you processed it for your needs.



ANALYZE

Comprehensive scan processing and analysis tools include profile centering, mirroring, symmetric averaging, shifting & normalization of profiles & depth doses, smoothing with boxcar & gaussian filters, and dose conversion using TG-51 and TRS-398.



LIFT AND RESERVOIR CARTS

FULLY INTEGRATED WITH LIFT AND RESERVOIR IN ONE

The DoseView 3D's cart contains both an electronic lift mechanism and 60 gallon (265 liter) water reservoir, resulting in hassle-free storage and setup. Additionally, a convenient storage area holds the power supply and other accessories. The lift and pump are powered by a single power cable, and a power pass-through cable allows convenient connection to the water phantom.

EXTENSIVE ADJUSTMENTS CAPABILITIES

The Precision Positioning Platform provides an ideal medium for maneuvering the DoseView 3D. This added flexibility allows subtle X and Y axis movements up to ±12.5mm, phantom rotation of ±1° and positive engagement at 10°, 45°, and 90° intervals. Achieve consistent detector orientation during in-plane, cross plane and diagonal scans.

EFFICIENCY LIFT CART

An alternate, portable lift cart is also available. The electric lift table has a capacity of 900 pounds and is capable of over 15 inches of vertical travel.

24/7 SUPPORT

Standard Imaging's acclaimed customer service and support ensures an easy transition of the DoseView 3D into your QA workflow and will guide you through any issues that may arise in the future. Standard Imaging also provides 24/7 phone support for DoseView 3D in USA.

For more information on warranties and additional maintenance and support packages please contact your Standard Imaging Account Manager or regional distributor.

DOSEVIEW 3D SPECIFICATIONS

Motion Control System

Travel Speed — 50 mm/s // **Positioning Accuracy** — ± 0.1 mm per axis // **Positioning Repeatability** — ± 0.1 mm per axis
PC Communication — Wireless or wired via RS-232 // **Control Method** — PC or via wireless pendant

Water Phantom (Acrylic Tank Only)

Outer Dimensions — [length × width × height] 683 mm x 692 mm x 542 mm
Scanning Dimensions — [length × width × height] 480 mm x 480 mm x 410 mm
Wall Thickness — 19 mm // Replaceable Fill/Drain Port

Lift Cart and Reservoir

Outer Dimensions — [length × width] 1247 mm x 762 mm // **Vertical Range** — 685 mm – 1185 mm (tank base to floor)
Water Pump — Electric fill, gravity drain // **Water Capacity** — 60 gal (227 liters)
Fill Speed — 6-7 min // **Drain Speed** — 16-20 min

Precision Positioning Platform

X / Y Fine Adjustment — ±12.5 mm // **Fine Rotational Adjustment** — ±1°
Discreet Engagement — 10°, 45°, and 90° intervals

DoseView 3D Electrometer

Channels — 2 // **Bias Voltage** — 0, ±150 to 450 (VDC) in 50 volt increments // **Range** — 2 pC – 999,999 nC
Resolution — 10 fC // **Connector Type** — Triaxial BNC or TNC (BNC unless specified)

Software/Computer Requirements

Operating System — Windows® 10 Professional, 64-bit Recommended
Runtime Environment — .NET 4.5.2 // **Processor** — Dual Core, 1 GHz; Quad Core, 2 GHz Recommended
Memory — 32-bit OS: 2 GB, 4 GB Recommended 64-bit OS: 4 GB, 8 GB Recommended
Hard Drive — 1 GB free space for initial software installation. Typically 2.5 MB/Year/Linac disk space growth. 25% free space Recommended.
Screen Resolution — 1440 x 900 or greater // **CD-ROM Drive** — 2X speed or greater
Connectivity — 9-pin serial RS-232 port or USB port with USB to RS-232 adapter

Specifications subject to change without notice.

DoseView 3D REF 92260, DoseView 3D Lift and Reservoir Cart REF 72260

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Exradin Ion Chambers

- ✓ Waterproof construction backed by a 5 year warranty
- ✓ Homogeneous materials throughout minimize measurement perturbations
- ✓ Available in MR-Compatible versions
- ✓ A standard in dosimetry measurements for over 40 years

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QA Pilot

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DETECTORS

UNCOMPROMISING **QUALITY**

The standard in dosimetry measurements for over 40 years.

EXRADIN DETECTORS

A Global **Reputation for Excellence**

For over 40 years top research institutes and standards laboratories world-wide have used Exradin Detectors for a broad range of dosimetry measurements in diverse radiation environments.

The Exradin line continues to build upon vetted ion chambers like the Exradin A12 and Exradin A5 with advanced microionization chambers. Our passion for metrology, expertise in engineering and dedication to durability ensures that each detector we produce embodies this tradition of quality workmanship and exacting precision.

STANDARD IMAGING

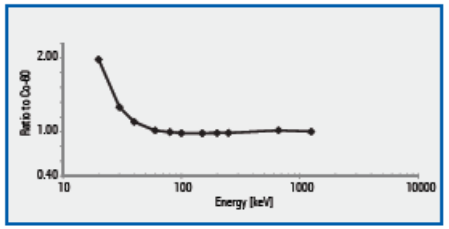
EXRADIN A28 ION CHAMBER

When combined with the DoseView 3D, the A28 allows for faster set-up while providing ideal scanning data.

The Exradin Advantage

The Exradin A28 features exceptional omni-directional spatial resolution for relative dosimetry scanning in water phantoms and use in small field measurements.

- Waterproof construction eliminates the need for sleeves or protective coatings.
- Chamber vents through a flexible tube surrounding the triaxial cable; ideal for use in water or plastic phantoms.
- The collecting volumes of Exradin ion chambers are defined by the guard, not an insulator, creating a significantly more stable signal than competing detectors.
- Axially symmetric design ensures a uniform isotropic response.
- Excellent inherent conductivity negates the need for coatings found in other chambers, which can flake off and require careful handling.
- Collection efficiencies of 99.9% or greater.
- Exradin detectors feature some of the quickest settling times of any manufacturer.



MR COMPATIBLE VERSION AVAILABLE

EXRADIN D1H & D1V DIODES

The Exradin D1V and D1H Diodes maximize spatial resolution and minimize angular dependence, allowing for consistent, accurate small-field stereotactic measurements.

Why use an Exradin Diode?

Exradin diodes produce flatter profiles and sharper resolution with a smaller active measurement area than traditional ion chambers. This allows for the precise measurement of minute fields while still achieving high visibility of the beam's penumbra.

Specialized for Small Fields

The Exradin D1V and D1H Diodes facilitate several measurement modalities in small fields.

- The diode face of the D1V is perpendicular to the beam when upright, making it ideal for photon scanning applications and use in water phantoms.
- The diode face of the D1H is perpendicular to the beam when flat, for use inside traditional plastic phantoms.

Both the D1V and D1H provide superior measurement of field sizes up to 20 x 20 cm^2 with excellent spatial resolution and minimal noise.

Minimize Angular Dependence

A common problem when performing measurements using diode-based detectors is angular dependence or significant variation in signal depending on the orientation of the detector. Exradin diodes help minimize this concern with less than 0.5% angular dependence when tilted up to 20° to the beam, providing more confidence in your results when measuring the penumbra or edge of the beam.

EXRADIN
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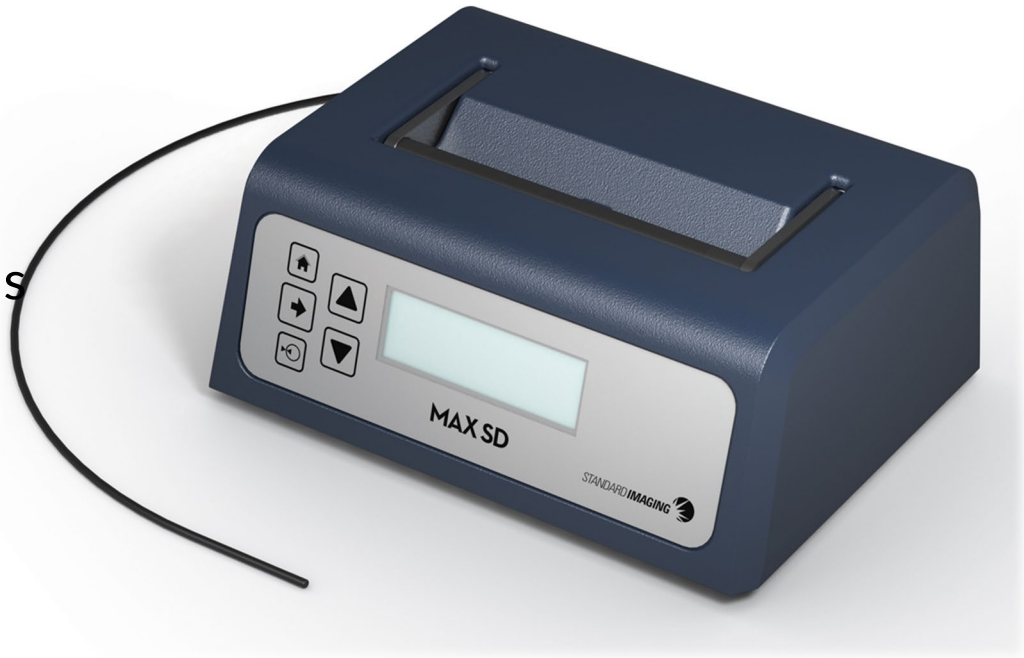
Exradin W2 Scintillator

- ✓ Does not perturb small fields at point of measurement
- ✓ Water equivalent for MV photons and electrons
- ✓ Point dose or scanning measurements
- ✓ kQ = 1.000, reported in IAEA/AAPM TRS-483



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EXRADIN
QA Pilot
DP1000
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STANDARD IMAGING

EXRADIN W2 SCINTILLATOR

MEASUREMENT WITHOUT PERTURBATION

The optimal water equivalent detector for small field dosimetry

SIGNIFICANT CLINICAL ADVANTAGES

Unlike other detector types, the water equivalent W2 scintillator does not perturb small field dose distributions when it is placed in the beam, so you can measure small fields with greater accuracy.

HIGH DEFINITION

The W2 system features a fiber with a 1x1mm scintillator, improving measurement resolution for the smallest field characterization measurements.

MULTIPLE DETECTORS INCLUDED

Easily switch out fibers to meet your measurement needs. Use a 1 x 1 mm detector when resolution is the primary need and a 1 x 3 mm detector when higher signal strength is required.

HIGHEST QUALITY ELECTRONICS

The MAX SD is a dedicated optical detection and signal processing unit that corrects for Cerenkov signal and provides point measurement capability through a web page interface on desktop or mobile.

SMALL FIELD SCANNING

Scintillation signal can be sent from the MAX SD to a water tank scanning electrometer in real time, so the W2 can be used for scanning your small field profiles and depth doses.

W2

HOME

EXRADIN W2 SCINTILLATOR

- AAPM/IAEA TRS 483 states the scintillator is the only detector with a kQ of 1.000, making the W2 the ideal SRS detector
- All corrections are built in
- Water equivalent
- Inherently waterproof
- Can be used for both water scanning and point dosimetry
- User replaceable fiber, includes both 1x1 mm and 1x3 mm
- No dose rate, temperature, or energy dependencies
- The W2 system features Čerenkov corrected measurement signals that can be converted to a proportional analog output, which can be read by any electrometer. This allows the W2 system to be connected to a water phantom system for scanning.

The Exradin W2 Scintillator is the ideal small field measurement tool overcoming dependencies present in conventional detectors

EXRADIN W2 SCINTILLATOR SPECIFICATIONS

Scintillating Fiber Collecting Volume

W2-1x1 — 1.0 mm diameter x 1.0 mm long // **W2-1x3** — 1.0 mm diameter x 3.0 mm long
Scintillator Housing — 2.8 mm diameter x 42 mm long
Optical Fiber — 1.0 mm diameter core x 2.2 diameter jacket x 4 m long

Materials

Scintillating Fiber — Polystyrene with ABS plastic enclosure and polyimide stem
Optical Fiber — Acrylic (PMMA) with Polyethylene jacket
Optical Fiber Minimum Bend Radius — 6 cm
Scintillating Fiber Physical Density — 1.05 g/cm3
Radiation Degradation — ~2% / kGy

Operating Parameters

Pressure — 650 to 770 mm Hg // **Temperature** — 15 to 30° C // **Relative Humidity** — 20 to 80%
Product Standards — Designed to meet IEC60601-1, CE 0413

MAX SD

MAX SD Size — 21 x 16 x 9 cm // **MAX SD Weight** — 3.6 kg (7.9 lbs)
Input — Scintillating fiber optical (SMA-905) // **Output** — Analog current (Two lug triaxial BNC)
US Patent Number 8183534

Point Dose Measurement Mode - Display Range

Rate — -4.8pA to 1.2nA, 1fA resolution (corrected output) // **Charge** — 0.000pC to ± 999.9µC, 1fC resolution

Scanning Mode - Display Range

Rate — -4.8pA to 100pA, 1fA resolution (corrected output)

Charge Collections

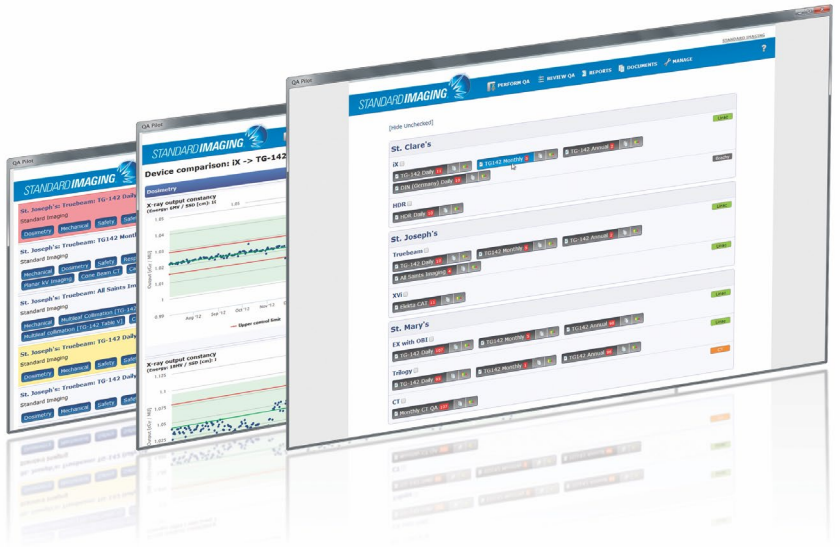
Trigger — Automatic start, stop, reset based on user defined thresholds (0.01 to 100pA).
Timed — User set range (0.5 to 9999.9 seconds, 0.1 second increments)
Continuous — Unlimited duration with manual stop.

STANDARD IMAGING

3120 Deming Way Middleton WI 53562-1461 USA // WWW.STANDARDIMAGING.COM // +1 608 831 0025

QA Pilot Software

- ✓ The only ***QA vendor-neutral*** QA data hub on the market
- ✓ All your QA tests and scheduling in one place
- ✓ Comprehensive departmental, audit and process improvement management tools.
- ✓ Secure, cloud-based access to data from anywhere with an internet connection



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ANNUAL QA

STANDARD IMAGING

QA PILOT

A NEW WAY TO VIEW QA

An integrated platform to centralize and manage machine and QA performance.

ALL CLINICS ARE TASKED WITH RECORDING, REPORTING AND ARCHIVING vast amounts of data to document machine performance for accreditation and auditing. QA Pilot makes these tasks more manageable. No more spreadsheets or multiple program management. Instead, with QA Pilot you can access and manage all of your QA data in real time from one secure, unified location anywhere internet is available, with any web-capable device.

QA Pilot's simple dashboard views create a fast and easy way to keep track of all machine QA. Collect, compare, report, analyze and share data from a number of linacs, systems, and users. Automatically import data from commonly used QA devices, or enter data with convenient drop-down menus and auto-populated fields. All data entries and edits are date/time stamped in a consolidated database, making collaboration across multiple sites a breeze. Implement daily, monthly and yearly reports for the protocol of your choice, such as TG-142, so you can easily keep track of your linac QA and ensure all equipment is in tolerance. QA Pilot is ACR, DVN, and JCAHO compliant.

"I can gather and manage all my QA data and documents in one place and I'm not limited to one particular QA vendor so I can use different QA devices across multiple facilities. The really exciting thing about this cloud-based solution is the future directions of radiation therapy QA for data management and decision making."

Todd Pawlicki, Ph.D.
Chief of Physics

A NEW WAY TO VIEW QA

QA Pilot is a QA management system developed with workflows for QA protocols, such as TG-142, in mind

Record data for ALL tests in TG-142 protocol	✓
Trend results with TG-142 or custom specifications	✓
Automatic e-mail alert notifications when tolerances are exceeded	✓
Longitudinal and distribution plots for all numerical data	✓
HIPPA/HITECH compliant network	✓
Retrieve data automatically from multiple common daily QA devices	✓
Build new protocols with provided templates	✓
Accessible from any internet connected device	✓
Access data from multiple devices with single license	✓
SaaS (Software as a Service)	✓
Capital expenditure	NONE
Software installation	NONE
Store calibration documentation with specific QA devices	✓
Manage QA equipment across your organization	✓
Complete control of users viewing and entering QA tasks per department or network	✓
Save and resume in progress QA activities	✓

QA PILOT

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ANNUAL QA

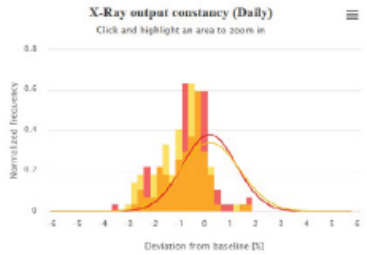
STANDARD IMAGING

QA PILOT

- Schedules
- Review
- Reports
- Analysis
- Manage
- Help

PERFORM QA

Access your data from any internet enabled device, including mobile. View the dashboard report, manage equipment tolerance, receive push notifications and communicate with responsible staff.



QA Your Way

QA Pilot's interface is very flexible, letting you create the tool that's right for you. Control visibility and actions for sites, linacs, users, and especially QA templates and reports. You can also import previous databases to fully integrate and retain QA history, and show or hide historical data deviations from baseline.

QA Pilot lets you create completely new tests, test groups and protocols that can be used for new technologies and the customized requirements of your facilities.

Plus, save time with the ability to copy and paste QA templates, organize custom tests by machine type, and create baseline values from a report to designate important data points.

Vendor Neutral Compatibility

Connect directly to Standard Imaging equipment used for TG-142 QA, or protocol of your choice. You can also import data seamlessly from other vendors unifying all your QA products providing vendor neutral data collection for automated integration.

Direct Connect

Data is collected automatically from supported devices, such as the QA BeamChecker Plus and PIPSpro Software.

REVIEW QA

Easy-to-read overview of machine QA workflow with actionable data

Review QA

Filter by:

- Site - | - Type -

Search:

Site	Machine	Type	Status	Date	Comments	Signed
St. Clare's	EX with OBI	TG-142 Daily	Fail	2015-04-20 09:55:32 EDT		
St. Joseph's	Truebeam	TG-142 Daily	In progress	2015-04-10 12:16:16 EDT		
St. Joseph's	Truebeam	TG-142 Monthly	Pass	2015-03-25 15:09:40 EDT		
St. Clare's	EX with OBI	TG-142 Annual	Pass	2015-03-25 11:24:35 EDT		
St. Mary's	IX	Daily QA	Pass	2015-02-19 08:48:33 EST		Y

Powerful QA Workflow with Document Sign Off

Workflow actions are stored and easily accessible to clinicians and administrators for seamless communication. Implement document signoff requirements from one or more individuals or roles. You can set deadlines for signoffs with automatic email alerts sent to the appropriate individuals.

Real-Time Performance Monitoring and Email Alerts

Get an at-a-glance overview of all your machines with the ability to see reported data. Instant out-of-tolerance email alerts and easily identifiable notifications help you respond before errors become clinically relevant.

Date	Name	Type	Tags	Version
17 Feb 2015	TG142 Procedures	Procedure	TG142	1.2

Document Manager

Store legacy QA data and calibrations; control and keep procedures with a built in Document Repository.

Document Management Asset Accreditation

Store and manage your QA and certification related materials. Upload version-controlled files effortlessly from anywhere in your organization, ensuring current versions of policies and procedures are available during inspections. Assign documents for review by creating due dates, sign off and restrictions for select personnel.

QA PILOT

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ANNUAL QA

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QA PILOT

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QA Reporting

Powerful QA reports & trending for a fast, easy way to keep track of all linac QA

Customizable Interface

Create baseline and tolerances and then compare at a glance across all QA devices.

Historical Trends

All numerical measurements can be trended over time with a customized view that can be set by date or energy. Tolerance and alert limits can also be displayed on the plots to easily view changes in data over time.

Equipment Manager

Upload and store all relevant documents associated with calibrations and apply calibration factors automatically to your data when appropriate. Reminders can be set up to ensure you're reminded when calibration on your equipment is due for recalibration.

Why QA Pilot?

QA data in the cloud is secure, easy to manage and optimized for mobile devices

QA DATA IN THE CLOUD

Security
provides data encryption and backup

Convenience
installation free with easy access anywhere

Accountability
peer-to-peer review with secure collaboration

No Maintenance Required

Software as a Service (SaaS) platform means:

- No software installation/management necessary
- Only internet access is required
- No internal in-house servers or IT support needed

Easy Calibration Management

No more searching for calibration documents. QA Pilot allows you to store calibration information and documents for your devices. Reminders will alert you of pending calibration expirations.

Secure Data

Data is securely stored, double encrypted and password protected on Amazon servers, meeting all HIPAA and EU compliance standards. To comply with ACR, DVN, and JCAHO requirements, all entries and edits are date/time stamped.

Mobile Optimized

Access from a mobile enabled device for dashboard reports, manage equipment tolerances, receive push notifications, and communicate with responsible staff.

IMPROVE CLINIC OPERATIONS

How does QA Pilot improve safety?

- At-a-glance analysis and status of all required tests and machine performance
- Be notified immediately when a machine is out of tolerance
- World class data integrity with HIPAA Compliant Amazon Servers, securing all your data

How does QA Pilot make my clinic more efficient?

- See how your clinic compares to others with similar machines with distribution plotting
- Easily store and produce all reports on-demand for the ACR and other regulatory agencies
- Easy to use, browser based software, connecting all your clinics/machines together
- Assignable user rights allowing you t low up on non-compliance

DP-1000

Simulation, Treatment Planning, Imaging, and Delivery
QA as recommended by TG-53, TG-66, and TG-142.

✓ Integrated Testing

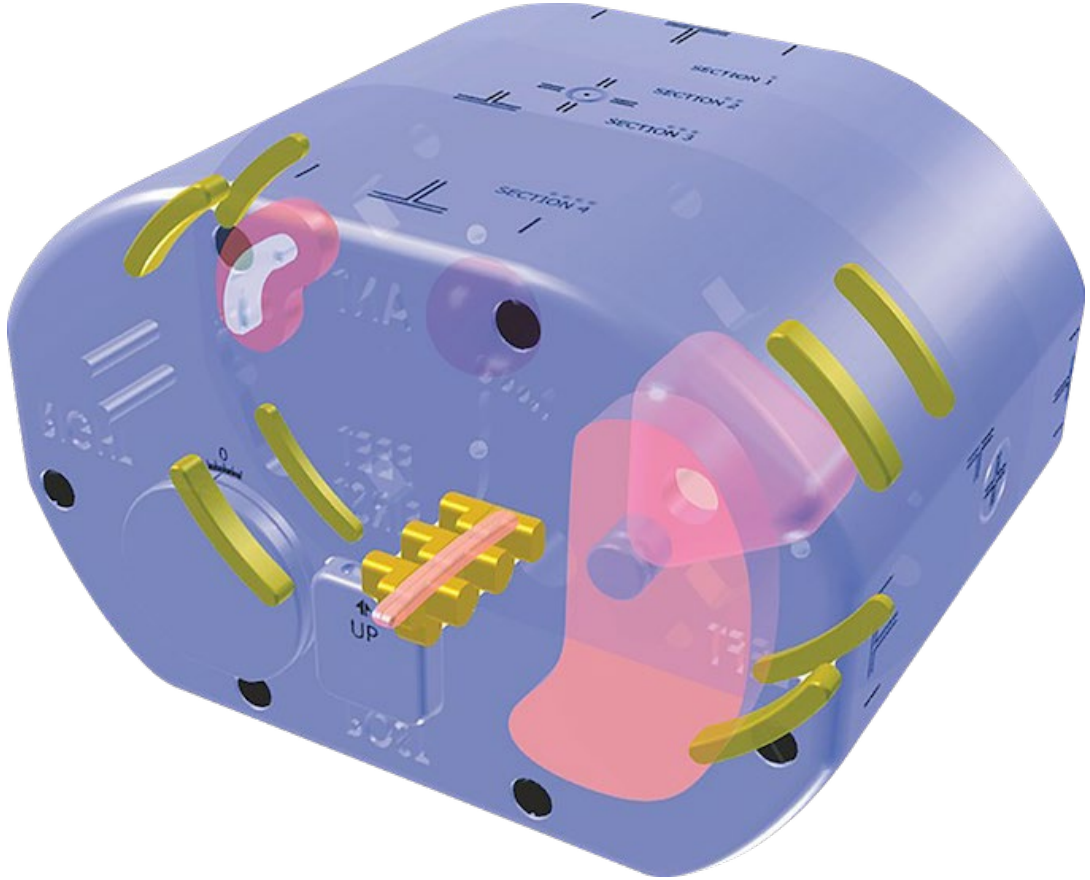
4 primary modules that are assembled using rods, of a density similar to trabecular bone, around the periphery. Various internal structures and test objects as well as external engravings and fiducials are utilized for integrated testing.

✓ Pseudo-Anthropomorphic Anatomy

Ribs, Vertebrae, Spinal Cord, Lung, and Kidney.

✓ Dose Verification

Measure dose with ion chambers, film, and OSLD.



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DP-1000

CT/SIM QA

- *Laser Alignment and Orientation for gantry walls and ceiling*
- *CT Couch Orientation, indexing, motion, and position*
- *Slice Thickness / Profile Width and Sensitivity Profile*
- *CT Number Constancy*
- *Field Uniformity and Image Noise*
- *Spatial and Contrast Resolution*
- *Virtual SIM with Hidden Target Localization, Contouring, and Laser Movement Accuracy*


DV3D


EXRADIN


W2

QA PILOT

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LUCY 3D QA Phantom

- ✓ Easy to use, faster commissioning and startup of your SRS program
- ✓ Provides full End-to-End QA tests for Daily imaging, Treatment planning and Delivery
- ✓ Simplification without sacrificing data integrity
- ✓ Known throughout the Medical Physics community as the gold standard for SRS QA

SDVP | W2 | EXRADIN | PIPSpro | SuperMAX | Adaptivo

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STANDARD IMAGING

LUCY 3D QA PHANTOM

UNRIVALED, END-TO-END STEREOTACTIC QA

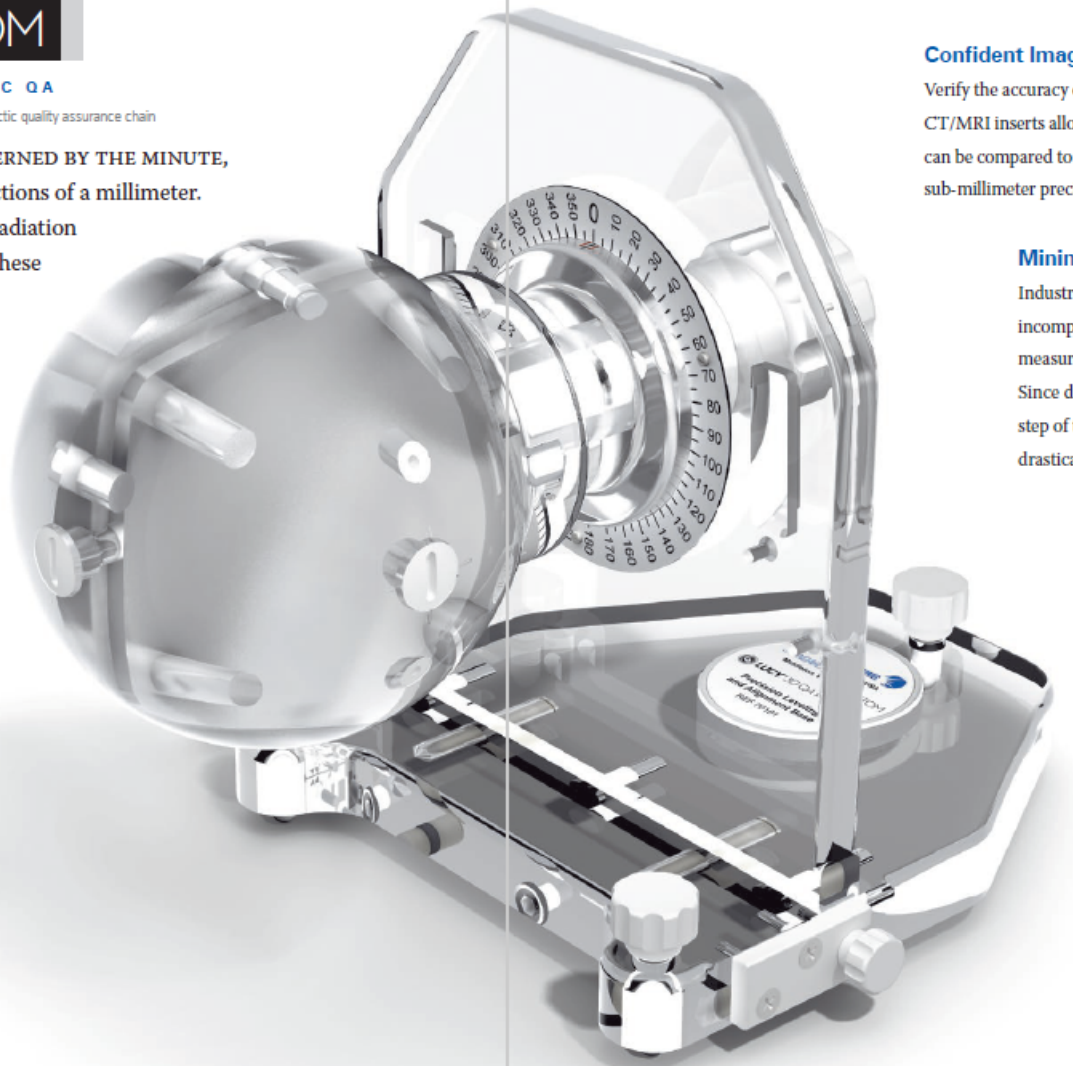
Industry-leading 0.1 mm accuracy minimizes errors at each link in the stereotactic quality assurance chain

STEREOTACTIC RADIATION THERAPY IS GOVERNED BY THE MINUTE, with successful treatment often hinging on fractions of a millimeter. Delivering such precisely-targeted, high-dose radiation requires a tool specifically designed to exceed these exacting standards.

Every facet of the Lucy 3D QA Phantom is tailored to provide the superior accuracy required for stereotactic QA. Unrivaled 0.1 mm accuracy and specialized inserts optimize the Lucy Phantom for each link of the QA chain. This precision and flexibility combine to make the Lucy Phantom ideal for any stereotactic treatment facility.

"Combined with the A16 chamber, the Lucy Phantom is an exceptional QA device. It is so easy to use with ExacTrac that we use it to perform patient specific QA for every SRS patient treated on our Novalis TX."

Jeff Campbell, MS
Medical Physicist
Integris Southwest Medical Center



VALIDATE THE COMPLETE STEREOTACTIC QA CHAIN

Confident Image Fusion

Verify the accuracy of the entire image fusion process. Point and volume CT/MRI inserts allow for consistent setup and acquisition. Fused images can be compared to measurements in the Lucy specifications to ensure sub-millimeter precision.

Minimize Transfer Errors

Industry-leading manufacturing tolerances provide incomparable accuracy when contrasting distance measurements to images in treatment planning software. Since distance measurements should be evaluated at each step of the imaging process, these rigid tolerances can drastically reduce cumulative uncertainty.

Simplify Patient Dosimetry

The Lucy dosimetry inserts help quickly obtain absolute, relative and point-dose dosimetry measurements at isocenter and at exact positions off isocenter. This allows for a seamless evaluation of dosimetric accuracy.

LUCY

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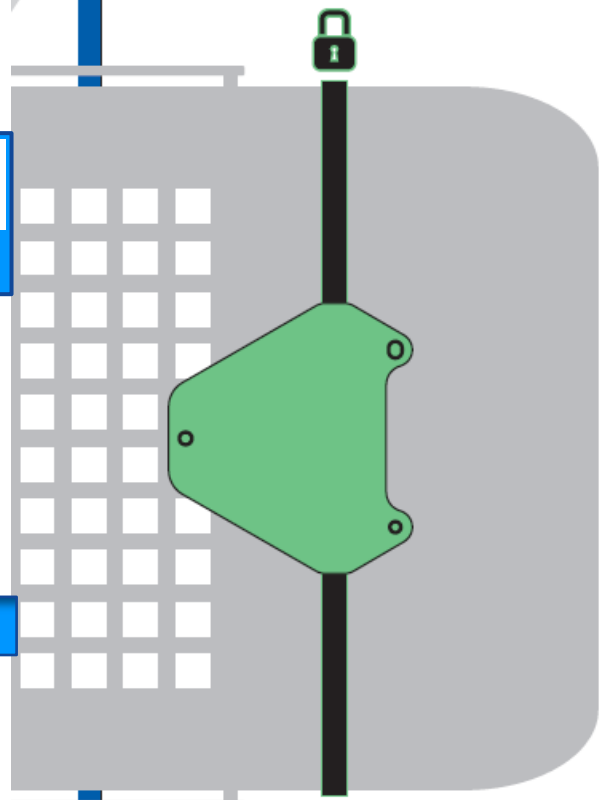
STEREOTACTIC

STANDARD IMAGING

LOCK

USE THE LUCY LOCK PLATE FOR REPEATABLE POSITIONING EVEN WHILE CHANGING INSERTS

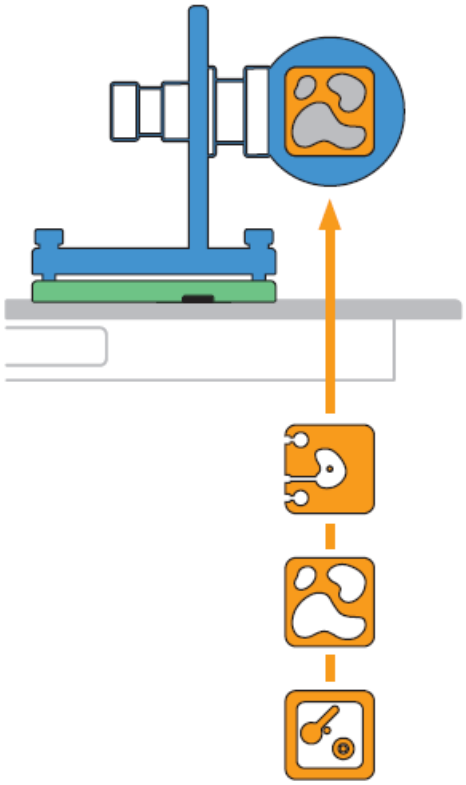


LUCY

HOME

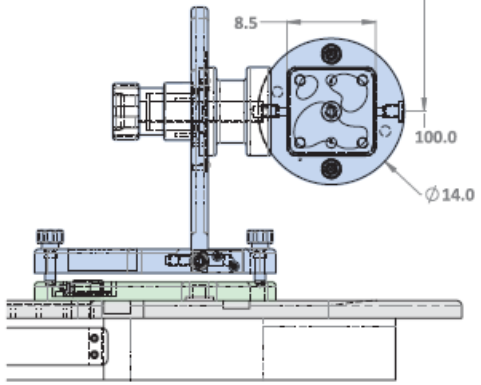
TARGET

A VARIETY OF TARGETING INSERTS ARE AVAILABLE FOR TESTING ACCURACY



DELIVER

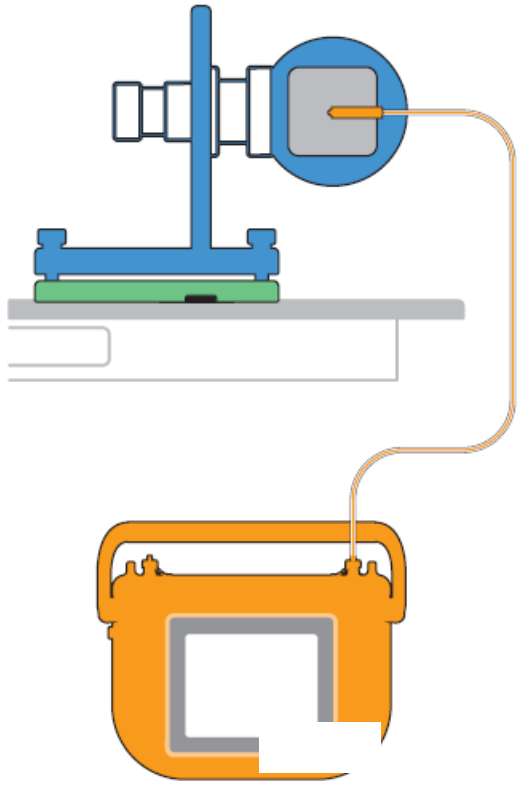
CREATE AND DELIVER A PLAN BASED ON KNOWN GEOMETRY



MEASURE CUMULATIVE ERRORS AND SYSTEMIC UNCERTAINTIES FROM END TO END IN THE STEREOTACTIC QA CHAIN

VERIFY

ION CHAMBERS OR FILM, CAN CONFIRM PRESCRIBED DOSE AND SOFTWARE CAN HELP WITH AUTOMATIC ANALYSIS OF TG-142 RECOMMENDED TESTS



Brochure
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Dosimetry QA Accessory Package

Dosimetry Insert for Ion Chambers and Detectors

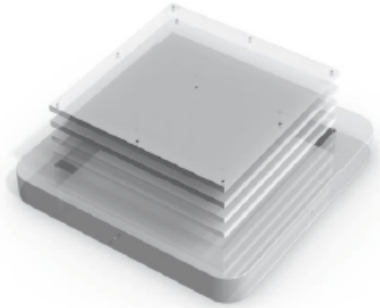
This insert positions the centroid of the ion chamber's active volume at the geometric center of the Lucy Phantom to easily measure absolute dose.

Target/Treatment Verification Film Cassette

This black acrylic cassette accommodates radiochromic or conventional therapy film. It positions one 3 in x 3 in film at the exact center of the Lucy Phantom. Sharp markers in this cassette produce four impressions, forming a square on the film equidistant from the center for isocentricity and distance measurement tests. A fifth marker is used to identify orientation.

Dosimetry Film Cassette for Three 2.5 in x 2.5 in Films

This clear acrylic cassette positions three films at the exact center of the Lucy 3D QA Phantom for film dosimetry measurements. The two films on either side of the central film are separated by 2.25 mm acrylic spacers.



CT Imaging QA Accessory Package

CT Volume Insert with Three Known Geometries

This insert has three irregularly shaped air volumes of 250 mm³, 750 mm³ and 1750 mm³. The volume insert evaluates the ability of the TPS to accurately recreate images as they are moved from one imaging system to another.

Electron Density Insert

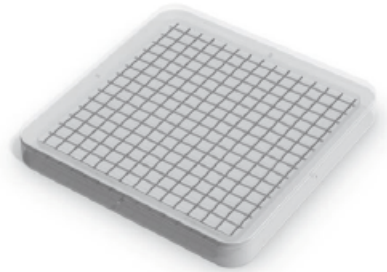
This insert provides a quick and convenient check of the CT density tables used by the imaging and treatment planning systems. The insert is comprised of: Blue Water, air, trabecular bone, cortical bone and adipose.

CT Marker Cylinders, set of Four

Each marker cylinder contains five 2 mm diameter aluminum spheres which are spaced 5 mm center to center or 3 mm apart. The targets within the four marker cylinders create a square 60 mm on each side. When used in conjunction with the MRI Marker Cylinders, these inserts evaluate the fusion function
of treatment planning programs.

Multiple Metastasis Insert

Commission and QA the the single-isocenter multiple metastasis treatment process. Image the phantom and then verify dose with film.



CT Grid Insert for Spatial Distortion

This two dimensional metallic grid is designed to check image distortion and symmetry. Grid lines are [illegible] tional settings for CT scanners. The grid wire [illegible] inum, spaced 5 mm apart and originate at the center of the insert.

LUCY

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LUCY

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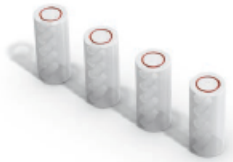
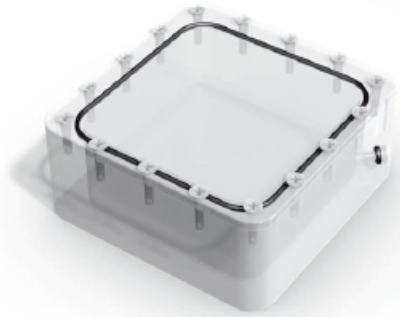
Brochure 4 of 5

MRI Imaging QA Accessory Package

MRI Volume Insert with Three Known Geometries

This insert has three irregularly shaped volumes filled with mineral oil; used to analyze image integrity when moved from one imaging system to another.



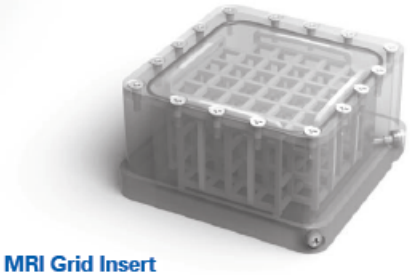


MRI Marker Cylinders, set of Four

These cylinders contain five, 2 mm diameter spheres, spaced 5 mm center to center or 3 mm apart. The targets within the cylinders create a square 60 mm on each side. When used in conjunction with the CT Marker Cylinders, these markers evaluate the fusion function of treatment planning programs.

MRI Signal Generator

The signal generator contains a manganese chloride solution that produces enough MRI signal strength to easily image the MRI Marker Cylinders.



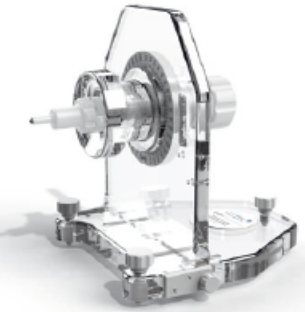
MRI Grid Insert

Used to check image distortion and symmetry, the insert consists of a manganese chloride solution and a three-dimensional 1 cm x 1 cm plastic grid. Each plane of the insert is unique and identifiable. The MRI marker cylinders can also be used in conjunction with the MRI spatial distortion insert.

Easy Setup with Framed and Frameless Systems

The Lucy 3D QA Phantom interfaces with most SRS frames and frameless systems for reduced setup and scanning time in CT and angiographic imaging.

- Mount the SRS frame (with Lucy) on the couch and treat within the manufacturer's exact coordinate system.
- Simulate patient positioning for frameless cranial or body SRS with the Precision Leveling and Rotational Alignment Base.
- Rotate the Lucy 360° for operation in coronal, sagittal or transverse plane.



Radiation Alignment Pointer

The Radiation Alignment Pointer attaches to the Precision Leveling and Rotational Alignment Base for secure positioning. The 5 mm tungsten sphere tip is used for radiation, laser and optical alignment. It can be locked into a Lucy frame for easy setup and verification at isocenter with film or EPID.

Winston-Lutz Test for Radiation Isocenter

The tungsten sphere tip of the Radiation Alignment Pointer can be imaged for the Winston-Lutz test. The sphere is placed at the mechanical isocenter of the treatment room as determined by the room lasers. The accelerator is then rotated to each required gantry angle, and the sphere is imaged with film or an EPID.

The Stereotactic Module of PIPSpro Software automates Winston-Lutz analysis and provides 3D offset measurements.

BrainLAB

BrainLAB Frameless

Elekta Fraxion™ / EXTEND™

Leksell Gamma Knife®

Varian / CRW/BRW

STANDARD IMAGING

Additional Accessories

CT/MRI Isocentric Volume Insert

This insert has an isocentrically-placed target of known volume for integrated testing of CT and MR imaging, image fusion and treatment planning and a center marker sphere for isocenter-alignment.

3D Volumetric Target Dosimetry Kit

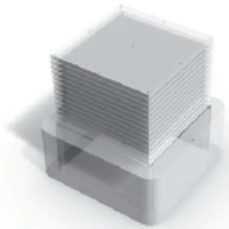
The Multiple Target Shapes Insert offers complex geometries targets of known dimensions and volumes to challenge and assess the reconstruction capabilities of the treatment planning system. Evaluate the ability of your TPS to include and avoid critical structures and then utilize the included film cassette to verify dose delivery to the target.

IGRT kV and X-Ray Angiography Marker Cylinders

The IGRT kV and X-Ray Angiography Marker Cylinders are used with the CT Marker Cylinders and the MRI Marker Cylinders to evaluate the fusion function of treatment planning programs.

Dosimetry Cassette for Thirteen 2.5 x 2.5 inch films

These cassettes position film in the large void in one hemisphere of the Lucy 3D QA Phantom for film dosimetry measurements. The cassette and spaces are made of clear acrylic.



Universal Couch Lock

The Universal Couch Lock ensures accurate positioning of the Lucy Phantom and Precision base on the couch. The Couch Lock is compatible with a standard two-pin CIVCO Lock-Bar.

LUCY 3D QA PHANTOM (REF 91210) SPECIFICATIONS

LUCY 3D QA PHANTOM	Acrylic Sphere 140 mm (5.51 in) diameter
Blank Filler Plug (HEMI-C)	81 x 81 x 35 mm (3.19 x 3.19 x 1.38 in)
Blank Filler Plug (HEMI-A)	85 x 85 x 10 mm (3.35 x 3.35 x .39 in)
Accessory Port for Ionization Chambers	8 mm (.31 in) diameter
PRECISION LEVELING AND ROTATIONAL ALIGNMENT BASE	
Height	30 cm (11.81 in)
Depth	23 cm (9.06 in)
Width	20 cm (7.87 in)
Weight	3.4 kg (7.5 lbs)
DOSIMETRY QA ACCESSORIES	
Dosimetry Insert for Ion Chamber	85 x 85 x 10 mm (3.35 x 3.35 x .39 in)
Dosimetry Film Cassette for Three 2.5" x 2.5" films	85 x 85 x 10 mm (3.35 x 3.35 x .39 in)
Target/Treatment Verification - Film Cassette - Four Titanium Fiducial Markers - One Titanium Fiducial Marker for Orientation	85 x 85 x 10 mm (3.35 x 3.35 x .39 in) 60 mm (2.36 in) square pattern
Dosimetry Film Cassette for Three 3.0" x 3.0" films	85 x 85 x 10 mm (3.35 x 3.35 x .39 in)
Dosimetry Film Cassette for Thirteen 2.5" x 2.5" films	85 x 85 x 35 mm (3.35 x 3.35 x 1.38 in)
CT QA ACCESSORIES	
CT Marker Cylinders, set of four - Five 2.0 mm Aluminum Spheres per cylinder	10 mm (.39 in) length, 25 mm (.98 in) diameter 5 mm (.197 in) center-to-center
CT Volume Insert with 3 irregular known volumes - Geometry One - Geometry Two - Geometry Three	85 x 85 x 10 mm (3.35 x 3.35 x .39 in) Area 250 mm, Volume 2500 mm³ Area 750 mm, Volume 7500 mm³ Area 1750 mm, Volume 17500 mm³
CT Grid Insert for spatial distortion	85 x 85 x 10 mm (3.35 x 3.35 x .39 in) 0.5 mm (.02 in) aluminum wire spaced 5 mm (.197 in) apart
Multiple Metastasis Insert	63 x 63 x 20 mm (2.5 x 2.5 x .78 in)
MRI QA ACCESSORIES	
MRI Marker Cylinders, set of four - Five 2.0 mm mineral oil spheres per cylinder	10 mm (.39 in) length, 25 mm (.98 in) diameter 5 mm (.197 in) center-to-center
MRI Volume Insert with three known Geometries - Geometry One - Geometry Two - Geometry Three	85 x 85 x 10 mm (3.35 x 3.35 x .39 in) Area 250 mm, Volume 1700 mm³ Area 750 mm, Volume 5250 mm³ Area 1750 mm, Volume 12250 mm³
MRI Signal Generator - Cavity Filled with Manganese Chloride	85 x 85 x 35 mm (3.35 x 3.35 x 1.38 in)
MRI Grid Insert	85 x 85 x 35 mm (3.35 x 3.35 x 1.38 in)
IMAGING QA ACCESSORIES	
IGRT Localization & Angiography Marker Cylinders, set of four - One 2.0 mm Lead Sphere in each cylinder	10 mm (.39 in) length, 25 mm (.98 in) diameter
RADIATION ALIGNMENT POINTER	
Includes 5 mm Radiation Alignment Tip	
MOSFET DOSIMETRY CASSETTE	
Cassette with 15 cavities 2.5 x 8 x 1 mm to accommodate MOSFET Diodes	85 x 85 x 10 mm (3.35 x 3.35 x .39 in)
TLD DOSIMETRY CASSETTE	
Cassette with 49 cavities 3.4 x 3.4 x 1 mm to accommodate TLDs	85 x 85 x 10 mm (3.35 x 3.35 x .39 in)
Cassette with 85 cavities 1.5 x 1.5 x 1 mm to accommodate TLDs	85 x 85 x 10 mm (3.35 x 3.35 x .39 in)

LUCY

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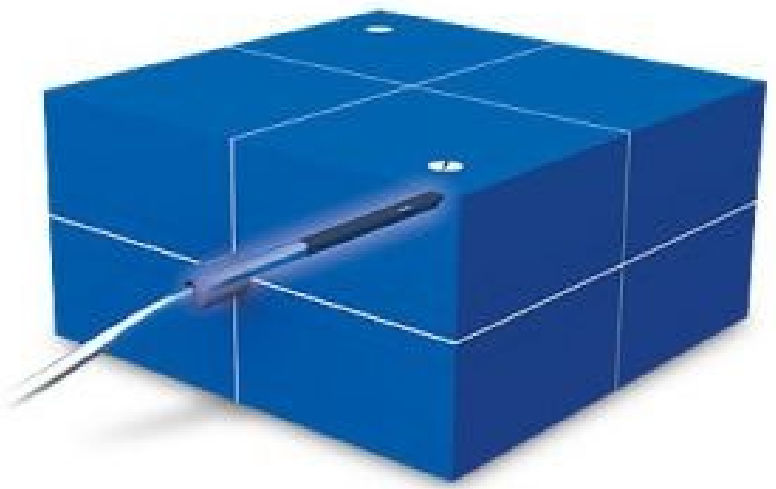
Stereotactic Dose Verification Phantom

- ✓ Recommended by Accuray for fast and accurate commissioning of the CyberKnife system
- ✓ Customizable configurations to meet the needs of your clinic
- ✓ Convenient design, built with precision
- ✓ Interior and exterior alignment features make positioning easy




LUCY


W2


EXRADIN


PIPSpro


SuperMAX


Adaptivo

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STANDARD IMAGING

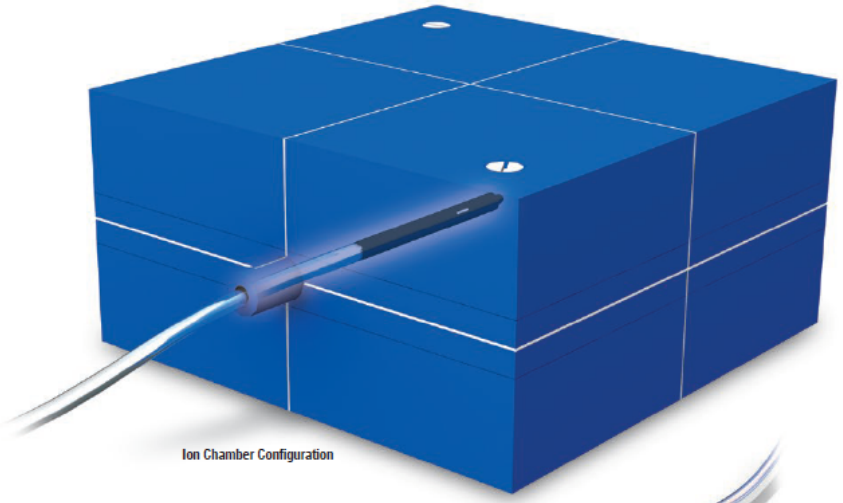
STEREOTACTIC DOSE VERIFICATION PHANTOM

VERSATILE STEREOTACTIC QA

For fast and accurate commissioning of Accuray CyberKnife® treatment systems and patient specific dose verification plans.

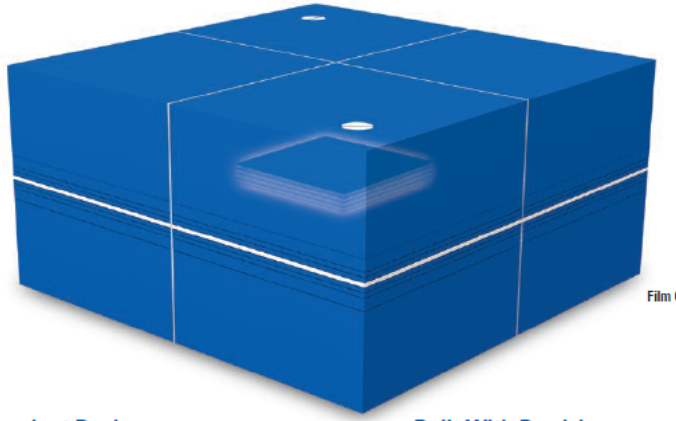
STEREOTACTIC RADIOSURGERY QA

The Stereotactic Dose Verification Phantom provides dose measurements for commissioning treatment systems, such as Accuray CyberKnife®, and specific plan dose verification. With just one phantom, use film, ion chambers and the unique SRS Dosimetric QA Slab to perform fast and accurate system evaluation.



Ion Chamber Configuration

Included ion chamber plugs
Model A16 Exradin Microchamber
Model A19 Exradin Classic Farmer-type Chamber



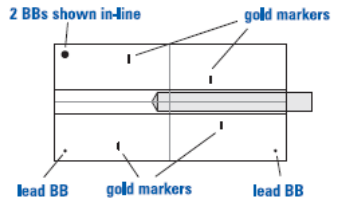
Film Configuration

Convenient Design

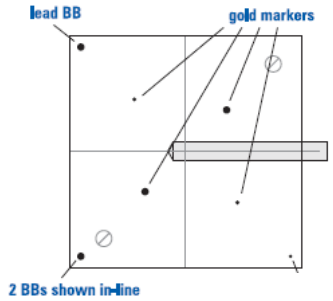
The standard phantom is 20 x 20 x 10 cm in size, comprised of two 4 cm top and bottom build-up slabs, and two interchangeable 2 cm test inserts in the center. Optional inserts include the SRS Dosimetric QA Slab and SDVP Heterogeneity insert. Rigid alignment posts ensure phantom configurations are precisely repositioned, and thumb or flat-head screws secure the phantom together for repeatable results. The Stereotactic Dose Verification Phantom is constructed of Blue Water material and additional slabs are available in many thicknesses for increased build-up.

Built With Precision

Laser alignment lines are provided to accurately position the phantom for CT scans and for treatment. Gold and lead fiducial markers are located throughout the phantom for additional orientation and positioning accuracy. Distance measurements within the CT scanning and TPS can be verified with confidence.



Side View



Top View

(larger marks indicate marker located in top slab)

SDVP

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CUSTOMIZABLE CONFIGURATIONS

Validate dose conformity, Monte Carlo algorithms and small field measurements with the Stereotactic Dose Verification Phantom inserts.

SDVP with SRS Dosimetric QA Insert

SDVP with SDVP Heterogeneity Insert

SRS Dosimetric QA Insert [OPTIONAL]

For rigorous testing and evaluation of imaging, treatment planning, and dose conformity.

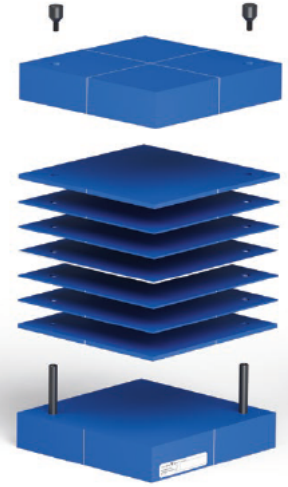
The SRS Dosimetric QA Insert provides complex geometric targets to evaluate the imaging avoidance and inclusion components of the treatment planning system. The volume of the test objects are known and can be used to evaluate the volumetric accuracy of the treatment planning system. Five CT densities are available for a QA check of the CT density model.

SDVP Heterogeneity Insert [OPTIONAL]

Verify your treatment planning system's Monte Carlo dose calculation within 0.5%.

The SDVP Heterogeneity Insert allows for validation of Monte Carlo algorithms for small fields in both homogenous and heterogeneous phantom materials. The insert has two 5 cm slabs and a 2 cm chamber slab made of lung equivalent material inserted between the Stereotactic Dose Verification Phantom Blue Water slabs to test these different environments. The Blue Water cavity plug with embedded gold fiducial markers simulates a small target, allowing for testing to be completed on your Cyberknife System at the 4 mm field size.

Use the Exradin W1 Scintillator or other small field detector to provide accurate results in this difficult testing environment.



SDVP with Film Dosimetry Insert

SDVP with Ion Chamber Insert

Film Dosimetry Insert [INCLUDED]

Five water equivalent Blue Water slabs allow film to be positioned 2 mm apart for dose profile measurements of very small SRS targets. A cavity in each slab positions a 2.5 x 2.5 inch film in the exact center.

Ion Chamber Insert [INCLUDED]

The 2 cm Blue Water Ion Chamber Insert has a cavity drilled to accommodate inter-changeable ion chamber plugs, allowing one slab to accommodate several plugs drilled for different ion chambers. The ion chamber plug positions the detector in the exact center of the phantom to facilitate repositioning and fast, accurate measurements. Two drilled ion chamber plugs and one solid plug are included with each phantom.

SDVP

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Exradin Ion Chambers

- ✓ Waterproof construction backed by a 5 year warranty
- ✓ Homogeneous materials throughout minimize measurement perturbations
- ✓ Available in MR-Compatible versions
- ✓ A standard in dosimetry measurements for over 40 years

LUCY | W2

SDVP | PIPSpro

SuperMAX | Adaptivo

Brochure

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DETECTORS

UNCOMPROMISING **QUALITY**

The standard in dosimetry measurements for over 40 years.

EXRADIN DETECTORS

A Global **Reputation for Excellence**

For over 40 years top research institutes and standards laboratories world-wide have used Exradin Detectors for a broad range of dosimetry measurements in diverse radiation environments.

The Exradin line continues to build upon vetted ion chambers like the Exradin A12 and Exradin A5 with advanced microionization chambers. Our passion for metrology, expertise in engineering and dedication to durability ensures that each detector we produce embodies this tradition of quality workmanship and exacting precision.

STANDARD IMAGING

EXRADIN A26 ION CHAMBER

REFERENCE-CLASS QUALITY

The only microchamber that was designed to meet reference class criteria from IEC 60731 and TG-51.

Small Field Excellence

Experience the same measurement quality in a microchamber you have come to expect from your reference chamber.

- Rapid settling
- Stable, reproducible measurements
- Realistic and meaningful ion recombination corrections
- Minimal polarity dependence
- Minimal energy dependence

Reduced Volume Averaging Effects

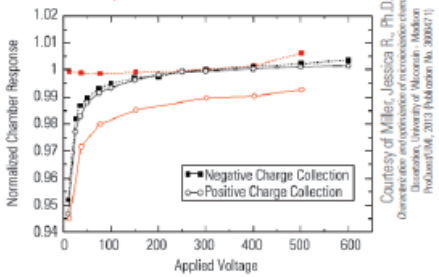
Uniform 4.3 mm diameter spot size reduces volume averaging effects and eliminates angular dependencies of volume averaging.

Fully-Guarded Micro-Chamber

Each Exradin thimble chamber has a guard that extends well beyond the insulator's surface, ensuring that the electric field defining the chamber's collecting volume is cleanly shaped by the guard.

MR COMPATIBLE VERSION AVAILABLE

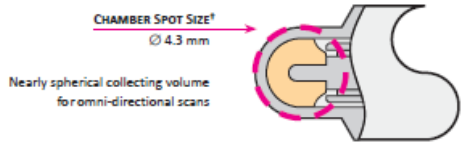
Exradin A26 Ion Chamber shown in black
Representative microchamber shown in red



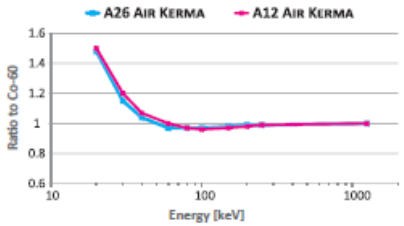
The Exradin A26 Ion Chamber does not exhibit the polarity effects seen in microchambers.

THE EXRADIN ADVANTAGE

- MR compatible version available
- Inherently waterproof construction eliminates the need for sleeves or protective coatings.
- Rugged conductive plastic provides years of use.
- Lack of stem-effect and low leakage for precise, reliable measurements.
- Versatile for absolute dosimetry calibrations in water, air or other phantom material.
- Minimal settling time.



ENERGY RESPONSE



Example Reference Class Criteria*	Reference Class Performance	Exradin A26
P_{leak}: Leakage	< 0.1%	✓
P_{pol}: Polarity	< 0.4% correction	✓
P_{pol}: Polarity	< 0.5% max variation	✓
P_{ion}: ion recombination	Linear with dose per pulse	✓
Initial recombination	Within 0.3% of unity	✓
Polarity dependence of P_{ion}:	< 0.1% between positive and negative bias	✓
Chamber stability	within 0.3% change over 2 years	Chamber is not yet 2 years old

** per TG 51*
† not minimum field size

EXRADIN A26 ION CHAMBER (REF 92746) SPECIFICATIONS

COLLECTING VOLUME	0.015 cm³
SPOT SIZE	4.3 mm
CENTROID OF THE COLLECTING VOLUME (from exterior tip of shell)	1.98 mm
OUTSIDE DIAMETER OF SHELL COLLECTING VOLUME	4.3 mm
INSIDE DIAMETER OF SHELL COLLECTING VOLUME	3.3 mm
SHELL WALL THICKNESS	0.5 mm
INCLUDED BUILDUP CAP	Co-60

SHELL, COLLECTOR AND GUARD MATERIAL	C552 Shonka air-equivalent plastic
MAXIMUM POLARIZING VOLTAGE	1000 V
NOMINAL LEAKAGE CURRENTS	± 10 fA
WATERPROOF	Yes
PRODUCT STANDARDS	CE 0413
	Designed to meet IEC60601-1, IEC60731
PATENT PENDING	

Specifications subj… otice.

EXRADIN
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SuperMAX Electrometer

- ✓ Premier two-channel, reference grade electrometer
- ✓ Built-in Detector library
- ✓ Easy to navigate color touch screen interface
- ✓ Exradin W1 Scintillator Integration

LUCY
W2
SDVP
PIPSpro
EXRADIN
Adaptivo

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STANDARD IMAGING

SUPERMAX ELECTROMETER

DOSIMETRY, ADVANCED

An intuitive user-interface and a host of innovative features make the SuperMAX the premier reference-grade electrometer on the market

THE PREMIER, REFERENCE-GRADE ELECTROMETER

The SuperMAX Electrometer is the culmination of one simple notion – *surpass expectations for a reference-grade electrometer.* Each aspect of the SuperMAX has been engineered to integrate seamlessly into clinical quality assurance, forming the preeminent dosimetry tool available.

- **Superior Accuracy and Stability**
  Standard Imaging's legacy of accuracy, and rounds of rigorous testing, ensure the SuperMAX exceeds requirements for reference grade instruments. This exceptional stability allows for measurement after only one minute of warm-up time.
- **Touchscreen Operation**
  A color, touchscreen interface has an on-screen keypad and pull-down menus for easy operation.
- **Unmatched Versatility**
  Two measurement channels with independent control over range, bias voltage and applied factors, and an extensive range are ideal for external beam IMRT, brachytherapy and stereotactic radiosurgery.

"The SuperMAX is a great electrometer. Its interactive screen is big and easy to see and use. Its small footprint makes it possible to set-up on even the most crowded work surface. Most importantly, it is fast to warm up, precise and very reliable. I particularly like the fact that the SuperMAX will store calibration factors for all of my chambers, as well as all my readings from our evening of data collecting. The SuperMAX is a great piece of gear."

David J. Misisco, MS
Medical Physicist
Community Hospital of the Monterey Peninsula

SuperMAX Electrometer shown with the Exradin A19 Ion Chamber and the Exradin A10 Ion Chamber

SuperMAX
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Brochure 1 of 3

Two Independent Channels

The SuperMAX Electrometer has two measurement channels with independent control over range, bias voltage and applied system factors. Both channels have an extensive range (0.001 pA to 500.00 nA, 0.001 pC to 999.9 µC) with automatically scaling units, ideal for a spectrum of applications, including:

- Cross calibration between two chambers
- Isocenter versus off-axis comparisons
- In-air versus in-water comparisons

These channels can be viewed individually in full screen or together in a split-screen interface, with the option to display the ratio of the two channels.

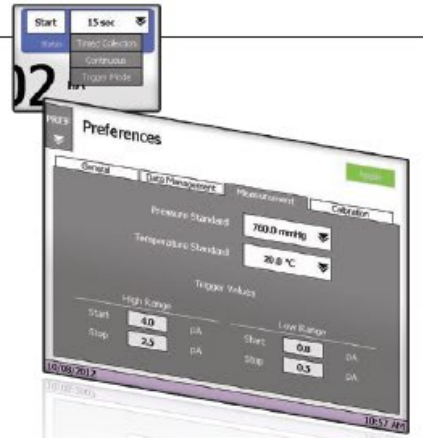
Flexible Collection Modes

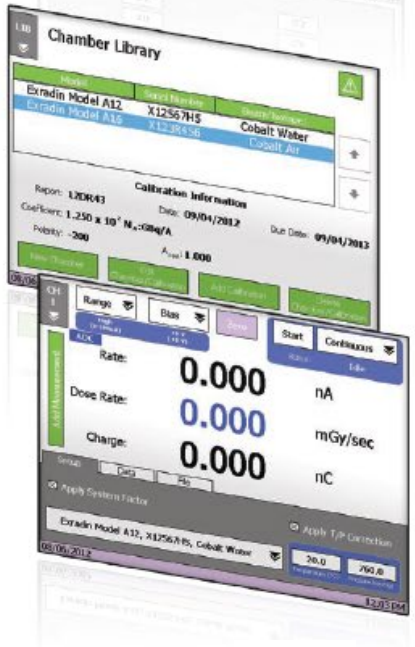
The SuperMAX Electrometer has three charge collection modes, facilitating data acquisition in a variety of clinical applications.

- Timed Charge Collection: obtain measurements in 1 second intervals from 1 second – 24 hours. Perform these measurements sequentially without re-zeroing the electrometer.
- Continuous Charge Collection: Manual start/stop measurement for an unlimited duration.
- Triggered Charge Collection: Automatically start, stop and save measurements at custom thresholds for high and low ranges. This mode is ideal for external beam measurements.

Comprehensive Detector Library

A detector library built into the SuperMAX can store over 100 calibrations and/or system factors, which are easily input using a step-by-step wizard. Once entered, these corrections can be quickly sorted and applied for real-time display of dose or dose rate values. Factor-applied measurements are shown side-by-side with raw data for increased analysis. No extra PC software or cables are needed to take advantage of this functionality.





SuperMAX

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Easily Save and Export Data

As charge collections are completed, measurements are automatically stored in a time- and date- stamped list. Rate or dose rate measurements can be added manually by tapping the "Add Measurement" button. At any time, this list can be exported to the USB flash memory in .csv or .txt files, transferred to a PC and opened in Microsoft Excel or other spreadsheet applications.

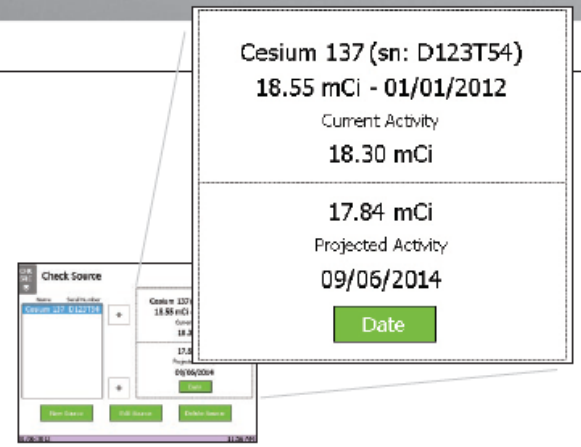
Exradin W1 Scintillator Integration

The Exradin W1 Scintillator is a new detector with characteristics that closely mimic water, negating many measurement corrections required with other detectors. When used in conjunction, these tools effectively eliminate Cherenkov Effect without the need for extraneous calculations. Two dedicated modes in the SuperMAX provide an intuitive interface for scintillator setup and measurement.

Exradin W1 Scintillator

Check Source Utility

The SuperMAX can store over 100 sources for quick projected strength calculations. Enter the known activity on a given date and the Check Source Utility can display either the current strength or calculate future strength.



SUPERMAX (REF 90018) SPECIFICATIONS

DISPLAY RANGE		
RATE:	*Low Range* 0.001 pA – 500.0 pA, 1 fA resolution *High Range* 0.001 nA – 500.0 nA, 1 pA resolution	
CHARGE:	*Low Range* 0.001 pC – 999.9 µC, 1 fC resolution *High Range* 0.001 nC – 999.9 µC, 1 pC resolution	
DIMENSIONS	*Height:* 8.1 cm, 3.2 in *Length:* 21.1 cm, 8.3 in	*Width:* 26.7 cm, 10.5 in *Weight:* 2.4 kg, 5.3 lbs
CHARGE COLLECTIONS		
TRIGGER:	Automatic start, stop, reset and save data based on user defined thresholds (*Start:* 0.2 – 9.9 pA; *Stop:* 0.1 – 9.8 pA)	
TIMED:	User set duration (*Range:* 1 s – 24 hours; *Increment:* 1 s)	
CONTINUOUS:	Unlimited duration with manual stop	
REAL TIME CLOCK	Date and time stamp for all measurements for easy identification	
INTERNAL MEMORY	Store preferences, >100 sources, >100 chamber/system factors	
RANGE SWITCHING	User selectable — High or Low	
CONFORMITY	CE 93/42/EEC Reference class according to IEC 60731	
DISPLAY	6.4" color TFT, touchscreen	
INPUT	(2) BNC two lug, triaxial connector	
BIAS VOLTAGE	Nominal ± 1000 volt bias	
USER SETTINGS:	– 1000 to – 100, 0; 100 to 1000 (set in 1 volt increments)	
POWER	100-240 VAC, 0.5 A max, 50/60 Hz input to external power supply, 9 VDC, 1.7 A power supply output to electrometer input, UL/TUL listed power supply	
ZEROING	Automatic zero function, user activated	
OUTPUT	(2) USB ports	
OPTIONS		
SuperMAX Accessory Kit (REF 72245) *Includes extra stylus, extra USB flash drive, and set of 5 extra screen protectors*		
SuperMAX Electrometer with TNC connector (REF 90018-C)		

PERFORMANCE SPECS

RESOLUTION	High Range: 0.001nA Low Range: 0.001pA	IEC 60731 (Reference Class) requirement: ± 0.25%
MEASURING RANGE	High Range: 0.400 nA – 500.0 nA	Low Range: 0.400 pA – 500.0 pA
MEASURING RANGE (CHARGE)	High Range: 0.400 nC – 999,999 nC Low Range: 0.400 pC – 999,999 nC	
REPEATABILITY	± 0.1%	IEC 60731 requirement: ± 0.5%
LONG-TERM STABILITY	± 0.5%	over one year
STABILIZATION TIME	± 0.5%	IEC 60731 requirement: ± 0.5% of value at 1 hr for measurements taken at 15 min and 6 hrs
ZERO DRIFT	High Range: < ± 0.1% Low Range: < ± 0.25%	IEC 60731 requirement: ± 0.5%
ZERO SHIFT	High Range: < ± 0.1% Low Range: < ± 0.25%	IEC 60731 requirement: ± 0.5%
NON-LINEARITY	± 0.2%	IEC 60731 requirement: ± 1.0%
RESPONSE TIME	High Range Rate: 3 s	Low Rate 15

Specifications subject to change without notice.

SuperMAX

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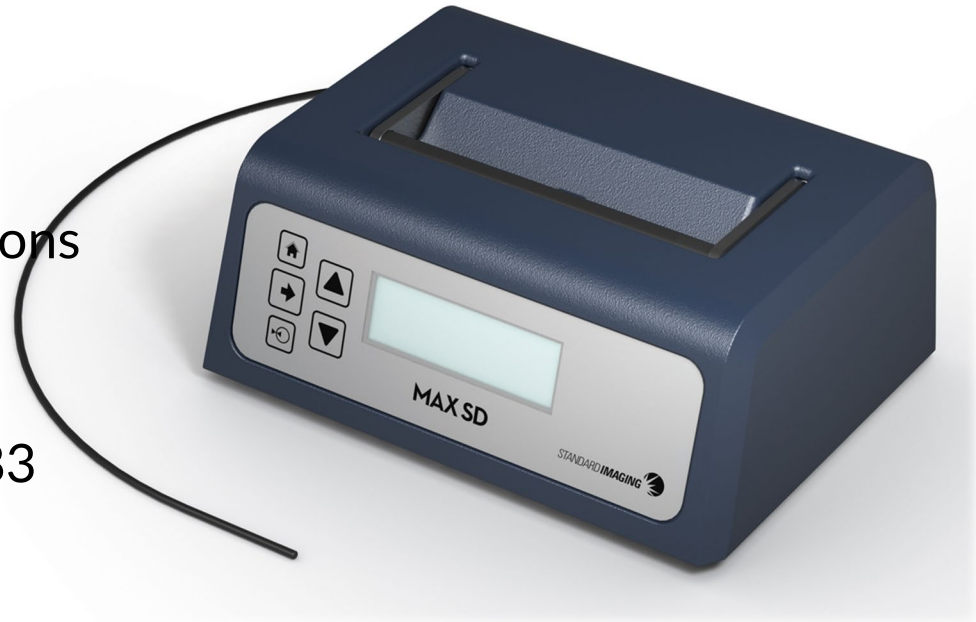
Exradin W2 Scintillator

- ✓ Does not perturb small fields at point of measurement
- ✓ Water equivalent for MV photons and electrons
- ✓ Point dose or scanning measurements
- ✓ kQ = 1.000, reported in IAEA/AAPM TRS-483



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Adaptivo
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STANDARD IMAGING

EXRADIN W2 SCINTILLATOR

MEASUREMENT WITHOUT PERTURBATION

The optimal water equivalent detector for small field dosimetry

SIGNIFICANT CLINICAL ADVANTAGES

Unlike other detector types, the water equivalent W2 scintillator does not perturb small field dose distributions when it is placed in the beam, so you can measure small fields with greater accuracy.

HIGH DEFINITION

The W2 system features a fiber with a 1x1mm scintillator, improving measurement resolution for the smallest field characterization measurements.

MULTIPLE DETECTORS INCLUDED

Easily switch out fibers to meet your measurement needs. Use a 1 x 1 mm detector when resolution is the primary need and a 1 x 3 mm detector when higher signal strength is required.

HIGHEST QUALITY ELECTRONICS

The MAX SD is a dedicated optical detection and signal processing unit that corrects for Cerenkov signal and provides point measurement capability through a web page interface on desktop or mobile.

SMALL FIELD SCANNING

Scintillation signal can be sent from the MAX SD to a water tank scanning electrometer in real time, so the W2 can be used for scanning your small field profiles and depth doses.

WWW.STANDARDIMAGING.COM // +1 608 831 0025

W2

Home

EXRADIN W2 SCINTILLATOR

- AAPM/IAEA TRS 483 states the scintillator is the only detector with a kQ of 1.000, making the W2 the ideal SRS detector
- All corrections are built in
- Water equivalent
- Inherently waterproof
- Can be used for both water scanning and point dosimetry
- User replaceable fiber, includes both 1x1 mm and 1x3 mm
- No dose rate, temperature, or energy dependencies
- The W2 system features Čerenkov corrected measurement signals that can be converted to a proportional analog output, which can be read by any electrometer. This allows the W2 system to be connected to a water phantom system for scanning.

The Exradin W2 Scintillator is the ideal small field measurement tool overcoming dependencies present in conventional detectors

EXRADIN W2 SCINTILLATOR SPECIFICATIONS

Scintillating Fiber Collecting Volume

W2-1x1 — 1.0 mm diameter x 1.0 mm long // **W2-1x3** — 1.0 mm diameter x 3.0 mm long
Scintillator Housing — 2.8 mm diameter x 42 mm long
Optical Fiber — 1.0 mm diameter core x 2.2 diameter jacket x 4 m long

Materials

Scintillating Fiber — Polystyrene with ABS plastic enclosure and polyimide stem
Optical Fiber — Acrylic (PMMA) with Polyethylene jacket
Optical Fiber Minimum Bend Radius — 6 cm
Scintillating Fiber Physical Density — 1.05 g/cm3
Radiation Degradation — ~2% / kGy

Operating Parameters

Pressure — 650 to 770 mm Hg // **Temperature** — 15 to 30° C // **Relative Humidity** — 20 to 80%
Product Standards — Designed to meet IEC60601-1, CE 0413

MAX SD

MAX SD Size — 21 x 16 x 9 cm // **MAX SD Weight** — 3.6 kg (7.9 lbs)
Input — Scintillating fiber optical (SMA-905) // **Output** — Analog current (Two lug triaxial BNC)
US Patent Number 8183534

Point Dose Measurement Mode - Display Range

Rate — -4.8pA to 1.2nA, 1fA resolution (corrected output) // **Charge** — 0.000pC to ± 999.9µC, 1fC resolution

Scanning Mode - Display Range

Rate — -4.8pA to 100pA, 1fA resolution (corrected output)

Charge Collections

Trigger — Automatic start, stop, reset based on user defined thresholds (0.01 to 100pA).
Timed — User set range (0.5 to 9999.9 seconds, 0.1 second increments)
Continuous — Unlimited duration with manual stop.

STANDARD IMAGING

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PIPSpro Software

- ✓ Most widely used imager QA program in the market
- ✓ Comprehensive filmless QA provides quantitative measurements, including SRS
- ✓ Come back to the fold - Amnesty Maintenance upgrade to latest version is a great bargain
- ✓ Comprehensive software covers TG142 requirements with single easy-to-use interface

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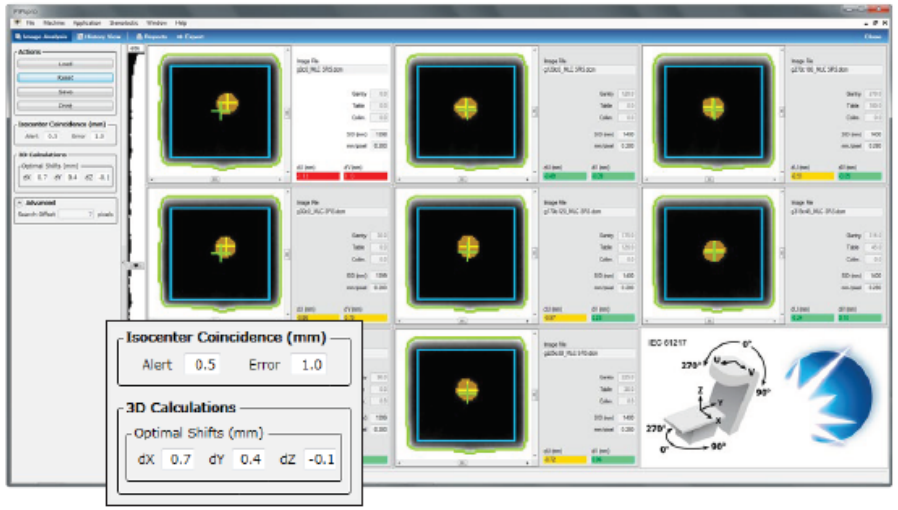
STANDARD IMAGING

PIPSPRO SOFTWARE

STEREOTACTIC MODULE

PRECISE QA FOR STEREOTACTIC RADIOSURGERY



Quick, Comprehensive Stereotactic QA

The Winston-Lutz test verifies machine isocentricity by using a ball marker aligned at isocenter to acquire a series of images at a variety of couch and gantry angles. PIPSpro's Stereotactic Module allows you to use your portal imaging system to acquire these images – no film required. Once the images are loaded into the Stereotactic Module, the software performs an analysis to determine the isocentricity with 3D results. X, Y, and Z shifts are reported with 0.1 mm accuracy, allowing you to have more confidence in your setup and treatment. The Stereotactic Module can accommodate both MLC and cone-based systems.

Unique Auto-Load feature

With the Auto-Load feature, analysis of Winston-Lutz images can be accomplished in seconds. Simply choose the folder that holds your images, and PIPSpro's Stereotactic Module takes care of the rest.

Track and Trend Results

Your results are saved with the built-in SQL database and the included trending features, allowing you to track any variations in your system that may require your attention.

FEATURES

- Automatically analyze Winston-Lutz test images
- 3D offsets reported with 0.1 mm accuracy
- Unique auto-load feature delivers results in seconds
- Analyze both cone based and MLC based stereotactic treatments
- Database saves all results for future analysis
- Trending module alerts you to any variations in your system
- Upgrade to the full PIPSpro software at any time

Winston-Lutz Phantom (sold separately)

The optional Winston-Lutz Phantom is designed for easy setup and precise positioning at isocenter. The phantom is comprised of a 3 mm aluminum sphere, carbon fiber rods attached, and a triangular base. The base provides both stability, and a three-point leveling system, making adjustments a breeze.

Winston-Lutz Phantom
shown with 3D Adjustment Holder (ref 72427)

PIPSPRO SOFTWARE/COMPUTER REQUIREMENTS

Operating System	Windows® 10 Professional, 64 bit recommended
Processor	Dual Core, 1 GHz; Quad Core, 2 GHz Recommended
Memory	32-bit OS: 2 GB, 4 GB Recommended 64-bit OS: 4 GB, 8 GB Recommended
Runtime Environment	.NET 4.5.2
Hard Drive	32 GB or greater, 3 GB free space for software setup. Sufficient space to store input image and/or MLC Log files. 5 GB free space if setting up a local copy of SQL Server Express; 25% free space recommended.
Screen Resolution	1600×900 (16:9) or higher, 16-bit HiColor or greater
Optical Drive	Digital Versatile Disc(DVD)
Virtual Machines	Must support WMI (Windows Management Instrumentation)
Database Management	SQL Server 2014 minimum recommended
Connectivity	IPv4 LAN, 100 Mbit/s or greater

Windows® is a registered trademark of Microsoft Corporation.

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ADAPTIVO Software

- ✓ Automated data collection, automated analysis
- ✓ Independent QA with both in-vivo dose monitoring and daily/cumulative 3D dose calcs using CBCTs
- ✓ Adaptive QA capability now

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STEREOTACTIC

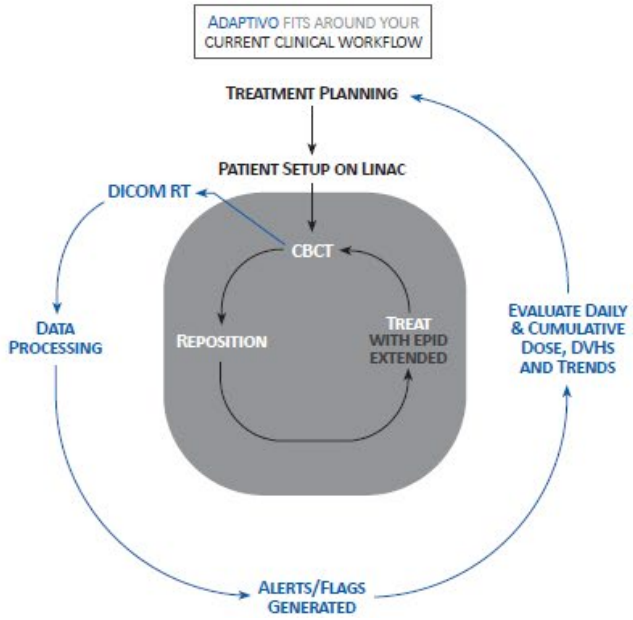
STANDARD IMAGING

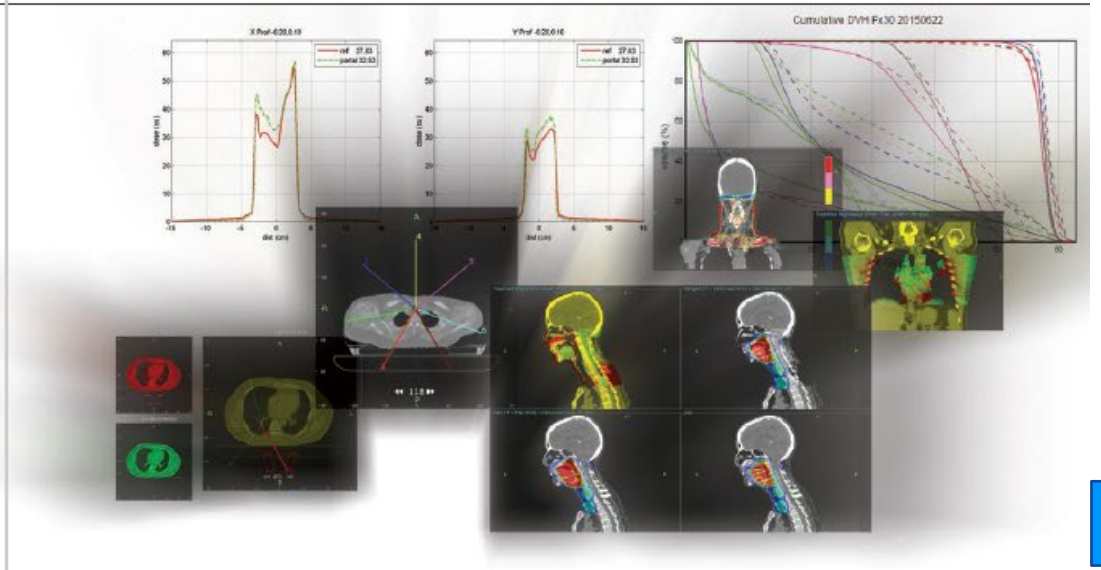
ADAPTIVO™

DELIVERED PATIENT DOSE

The only software that provides a true picture of patient and dose at each stage of treatment.

ADAPTIVO PATIENT DOSIMETRY SOFTWARE DOES SOMETHING OTHER PATIENT DOSIMETRY SOLUTIONS CAN'T DO — track and report the dosimetric impact of changes in patient anatomy and positioning. The software automatically imports and analyzes patients, presents data in a summary dashboard, and sends alerts for dose deviations needing attention. Adaptivo delivers clinically relevant actionable results, improves treatment quality, is billing compliant, and outshines other patient dosimetry products.





Adaptivo

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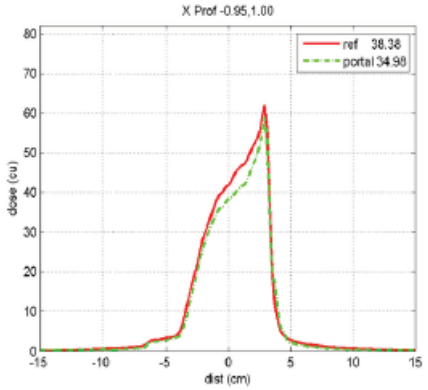
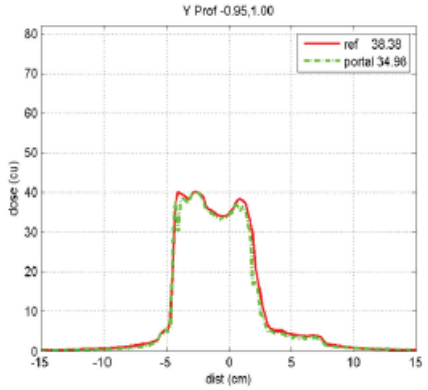
Adaptivo

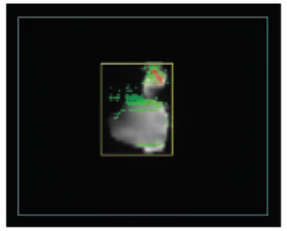
Portal Dose Profile (X)



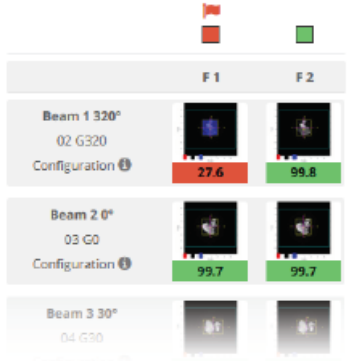
Portal Dose Profile (Y)



Gamma Over Portal Dose



Delivery Results



No Phantom Needed

Verify Plan Delivery

Adaptivo verifies IMRT and VMAT delivery using collected EPID images for quick and easy pre-treatment QA without the use of phantoms or additional detectors. The software communicates directly with the R&V system, and will automatically compare measured results to the predicted image. Adaptivo emails notification of either each pre-treatment delivery or only those that fail the acceptance criteria.

PRETREATMENT

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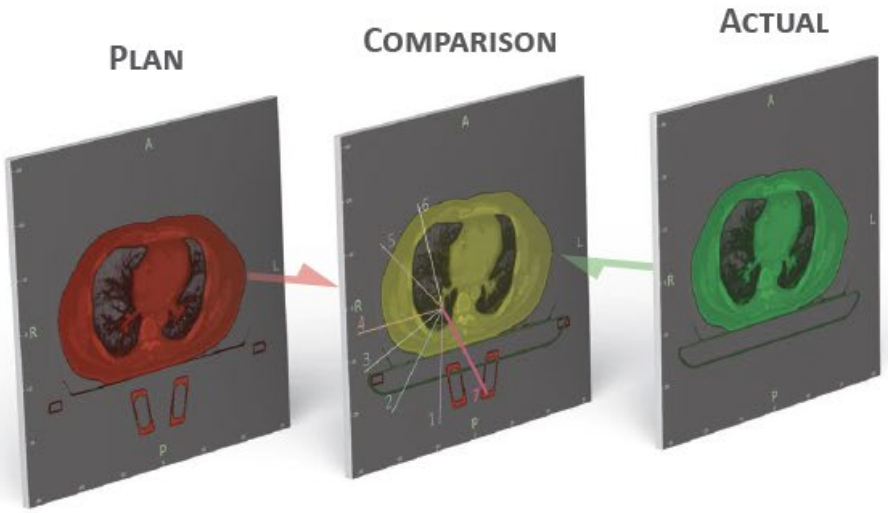
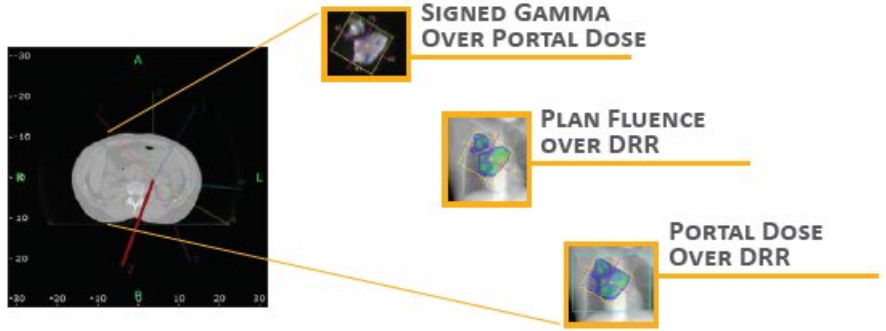
DAILY COUCH CORRECTION





DAILY EXIT DOSE MONITORING

View per beam metrics, per fraction metrics, and gamma metrics

IN VIVO

Adaptivo performs portal to calculated and portal to portal comparisons. The software monitors exit dose to expose unforeseen deviations from the treatment plan without adding time to your clinical workflow. This proactive monitoring allows for more responsive, informed decisions.

Adaptivo

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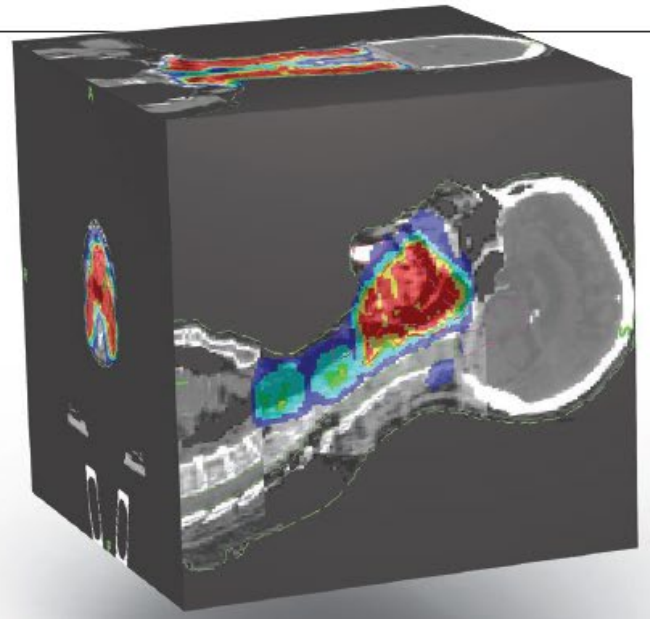

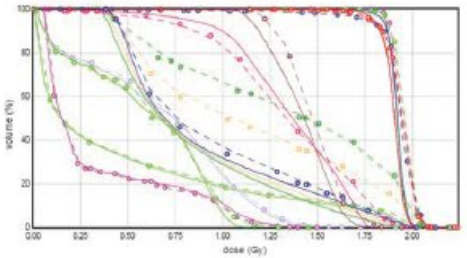

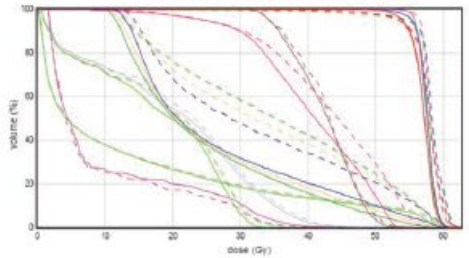

ACCOUNT FOR DELIVERED DOSE

Review daily and cumulative DVH

Adaptivo automatically maps the original planned contours to the daily CBCT images, so DVH curves can be generated using the daily dose calculated on the daily image. This deformable registration ensures changes in tumor size, weight loss, etc. are factored into both daily & cumulative dose and dose volume histogram (DVH) tracking.

ADAPTIVE

Adaptivo

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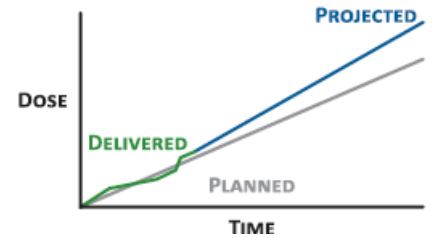
ADAPT WITH PROJECTED DOSE

Gain insights to improve patient treatment

ADAPTIVO

Adaptivo illuminates daily inconsistencies and cumulative dose deviations or trends that other software cannot detect. The complete view of delivered dose gives the data and confidence needed to validate necessary replanning. Radiation Oncologists can quickly judge whether a replan is required; focusing their attention on those plans that truly require altering, expediting the approval process and improving treatment quality.



DASHBOARD FLAGS

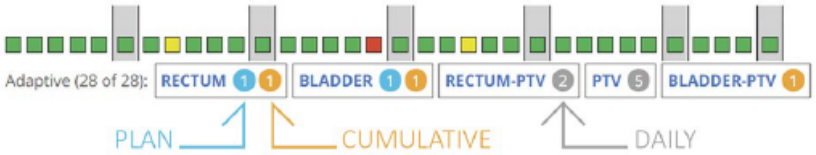
Results from all aspects of Adaptivo are accessible from the main dashboard screen.

GREEN FRACTION SQUARE
All beams passed gamma analysis of exit image.

YELLOW FRACTION SQUARE
One or more beams were in the warning region.

RED FRACTION SQUARE
One or more beams were in the alert region.

Grey shading around a square indicates that the analysis was performed using an average of several delivered fractions. Measured exit dose is compared with a predicted exit image, to ensure correct — not just consistent — delivery.



PLAN FLAGS
DVH analysis of the planned dose distribution informs you of planned doses that are outside recommended tolerances.

CUMULATIVE FLAGS
Cumulative dose tracking provides advance warning flags to indicate that doses are trending toward out of tolerance values.

DAILY FLAGS
3D dose calculation on the CBCT supports informed decisions for patient treatment alterations.

Adaptivo

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MAX EI

Simple SRS QA Phantom - Repeatable, comprehensive essential implementation of end-to-end SRS QA routines.

✓ Versatile Build

Made of tissue equivalent material. Strategically placed pseudo-skull, oral and sinus cavities for proper localization with IGRT. Use with or without thermoplastic mask. Quick setup without the need for a cradle or other accessories.

✓ Essential and Intuitive

Provides essential implementation of SRS QA for highly-repeatable, flexible and efficient routines with minimal impact on clinical needs.

✓ Full Flexibility

Compatible with virtually every treatment delivery modality and offers a flexible range of dosimetry options. Treatment delivery for multiple met cases possible with ion chamber, film and optional OSLD offers confidence in SRS QA.

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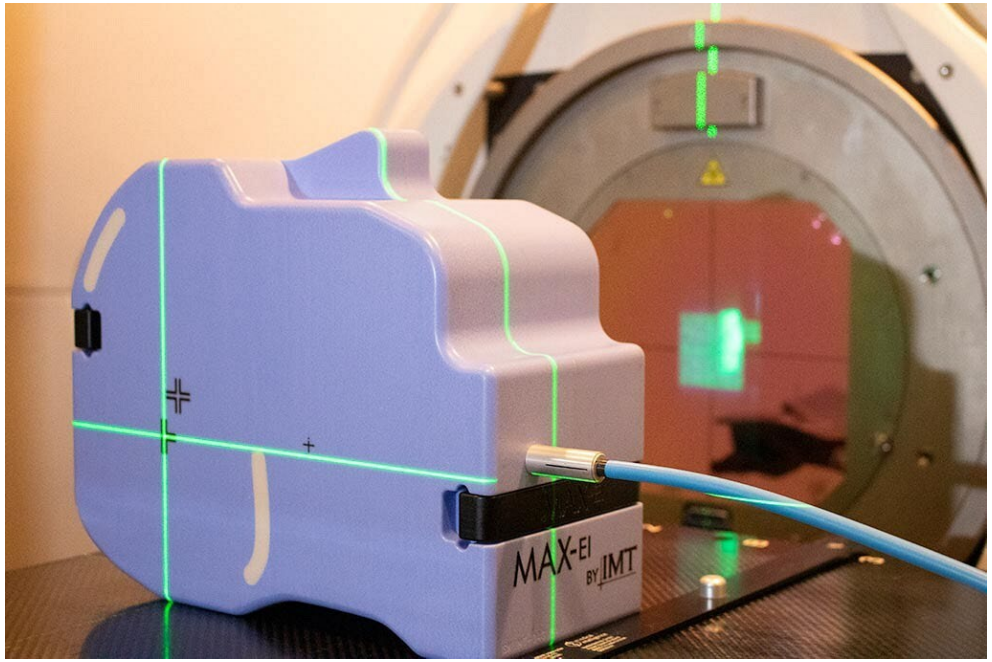
Winston Lutz Ready

Lower density material in brain region with embedded fiducials for Winston Lutz test and Offset Winston Lutz test. No disruption of image quality.



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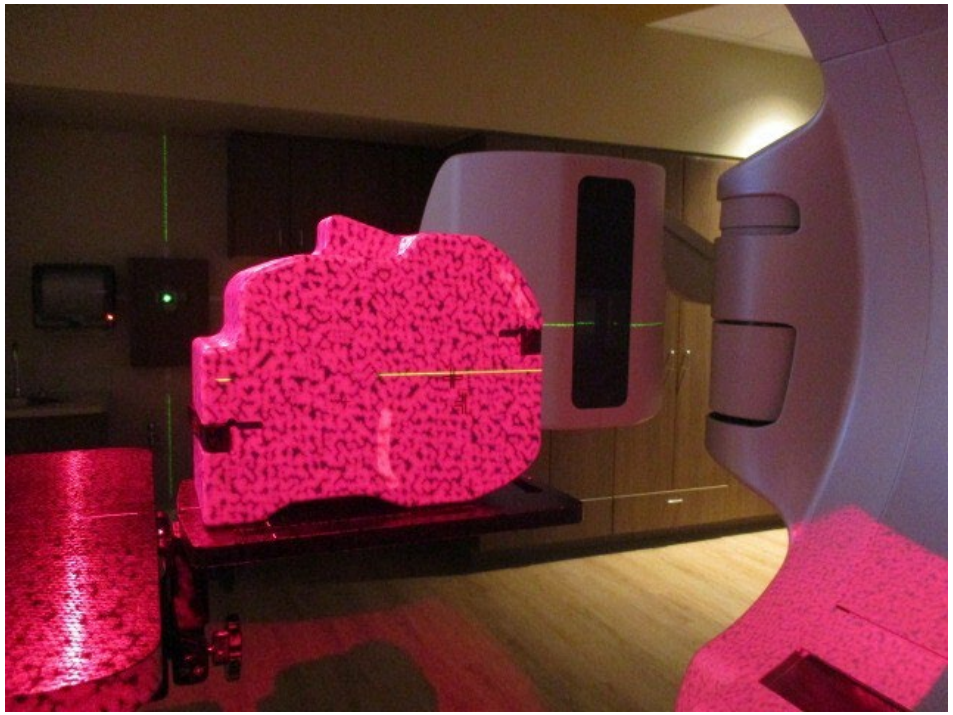
Efficient Evaluation

Evaluate critical components each day, characterize the percentage delta to the End-To-End Chain Baseline dataset, and quickly detect when the system needs attention.



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Easy Access for SRS and SGRT QA Phantom -
Anthropomorphic head phantom with easy access to cranial inserts.

✓ Reliable Repeatability

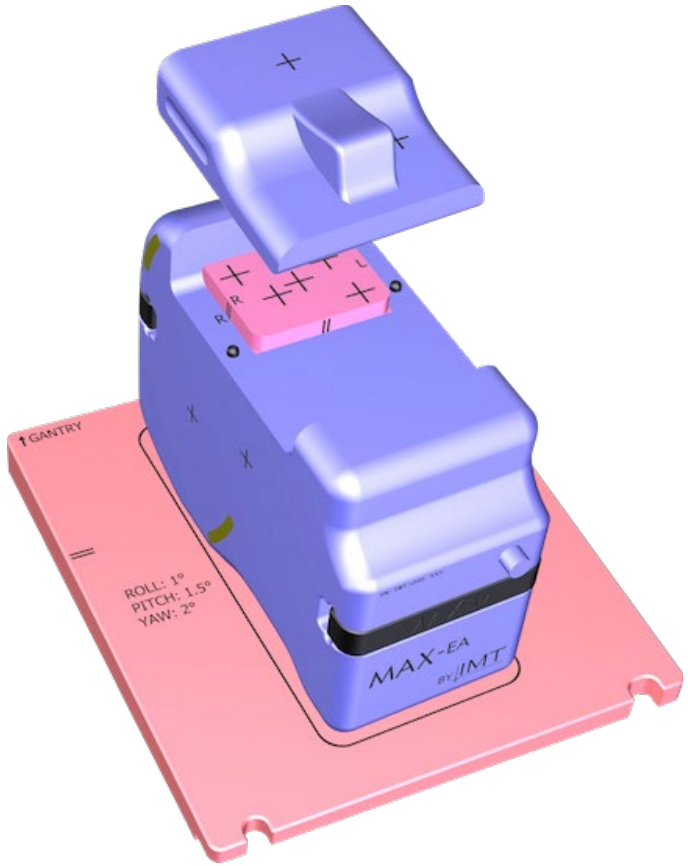
Reduce variation inherently caused by multiple setups while providing significant time savings.

✓ Quick, Easy Access

Access the cranial insert and anterior insert pocket quickly and easily. Inserts can be changed while the phantom is immobilized using an open-face thermoplastic mask.

✓ Standardization Efficiency

Standardize End-To-End and Daily SRS QA routines across multiple machines and sites with flexibility.



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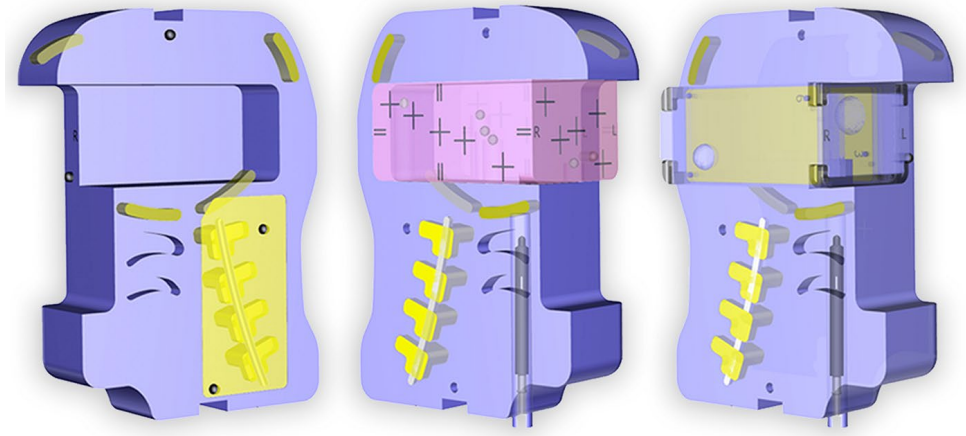
MAX EA

Ideal for SGRT/OSMS and IGRT QA

End-To-End SRS QA
Daily SGRT & IGRT
Daily Winston-Lutz
6DoF QA
Film + Ion Chamber
Multi-Site Standardization & Repeatability
iQA Auto Analysis Software



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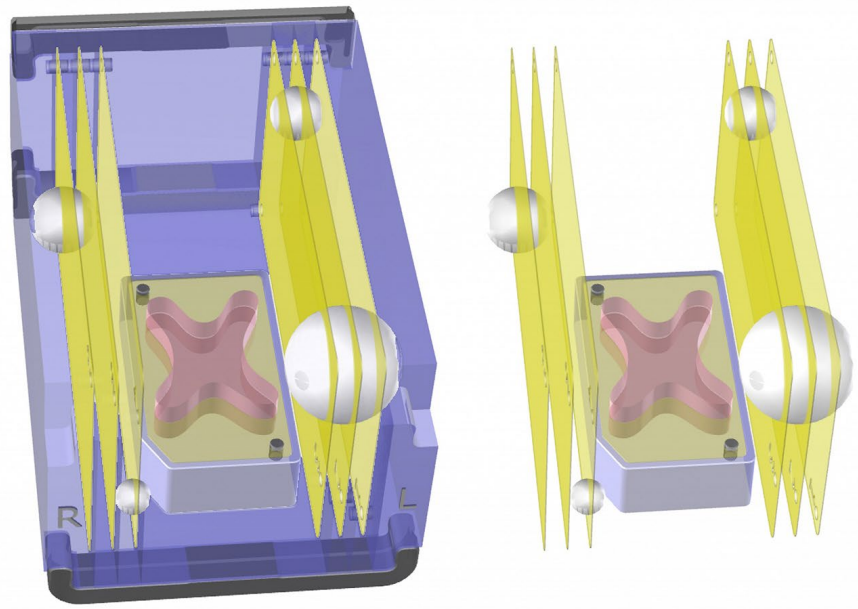
3D Film Inserts

Multiple Met/Single Isocenter QA

Features Seven Distinct Targets:

- 4 Spherical Targets
- 1 Ventricle Target
- 1 Vertebral Structure with Large Sagittal Film Plane
- 1 Ion Chamber / Detecto



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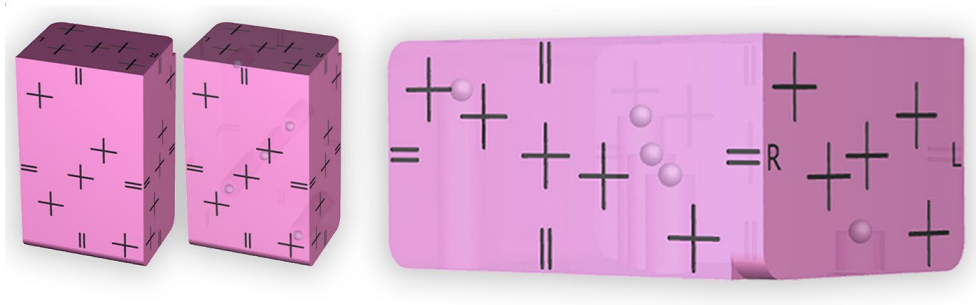
Winston-Lutz Insert

Multiple Met / Single Isocenter QA

- 5 Distinct Targets



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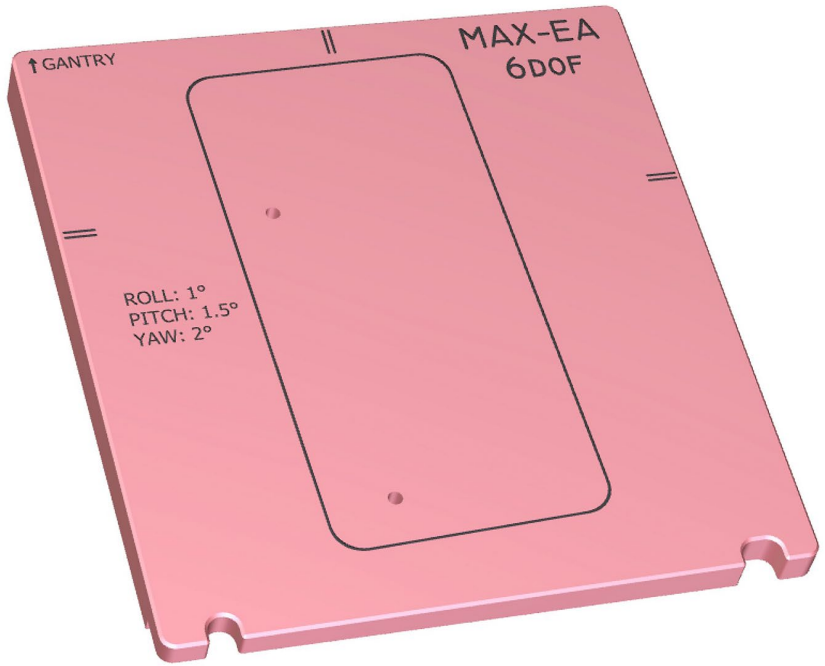
6DOF Shift Plate

Indexes to couchtop to impart a shift in Pitch, Roll, and Yaw.



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MAX HD

MR-Guided SRS QA Phantom - Anthropomorphic head phantom for realistic end-to-end SRS QA.

✓ End-to-End System Testing

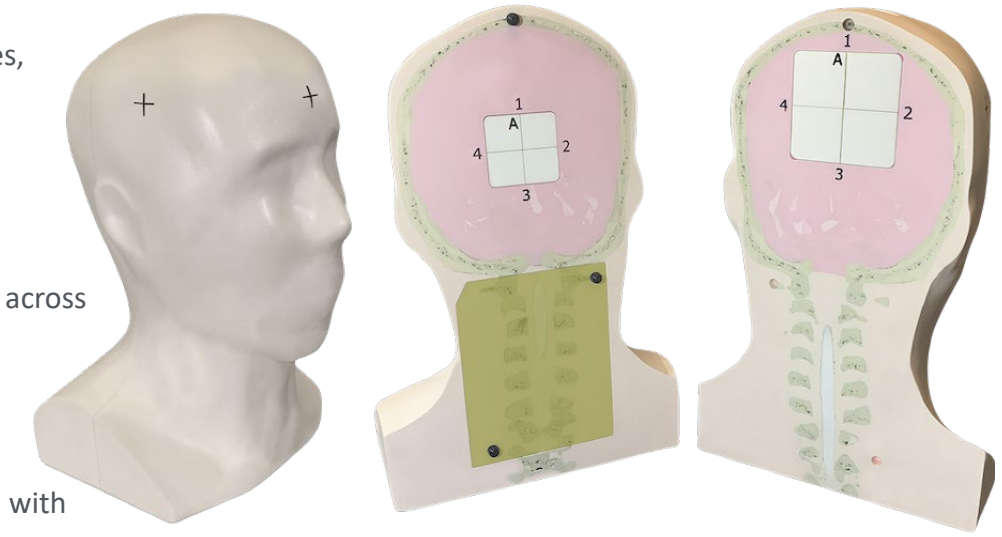
The anthropomorphic features include skull, brain, vertebrae, sinus cavities, cortical and trabecular bone structure, larynx, trachea, and oral cavities.

✓ MR-Visible

Cast from new proprietary materials, the entirety of MAX-HD's soft tissue anatomy is MR-Visible, providing truly comprehensive End-To-End SRS QA across MR-Guided and MR-Simulation systems.

✓ SRS QA Commissioning

Confirm accurate setup and function of SRS planning and delivery systems with MR-Guided capability



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MAX EI

QACC

MAX EA

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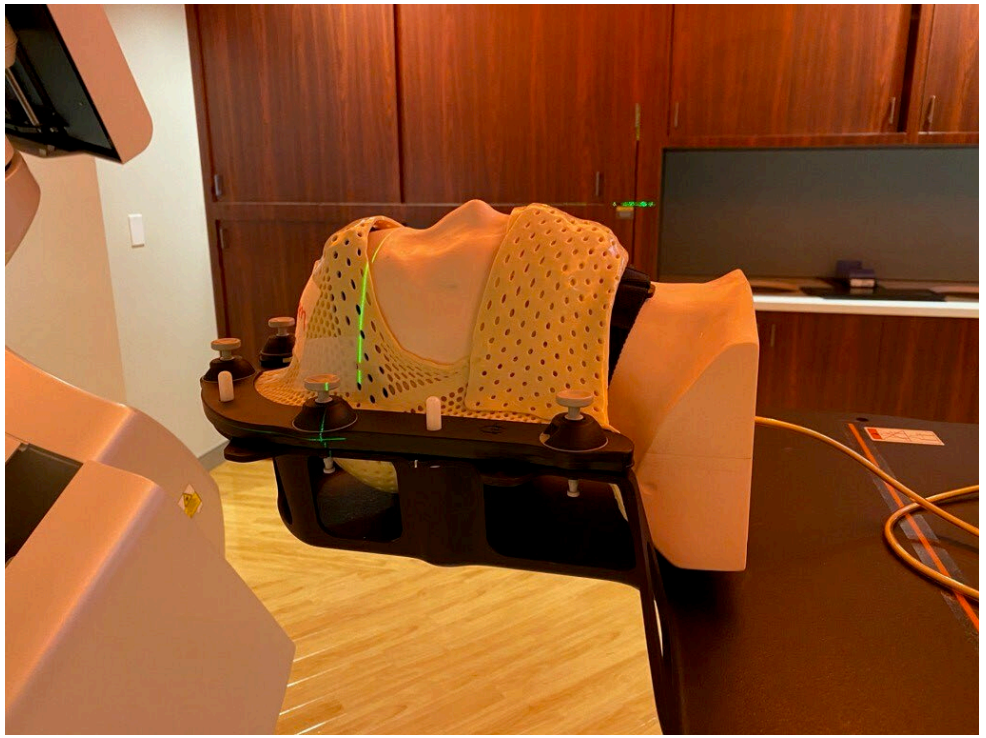
MAX HD

TG-101 and TG-135

Supports multiple AAPM TG SRS testing protocols through:

- Complete End-To-End Tests
- Winston-Lutz test
- Isocentric Verification
- Bony Anatomy Localization
- Laser Alignment
- Localization / Repositioning with Couch Shifts
- Patient Orientation / Image Transfer QA
- IGRT QA for MR, X-Ray and On-board kV and MV images, including CBCT
- OSMS or SGRT Optical System Positioning QA
- MR/CT Image Fusion Multiple Met Dosimetry



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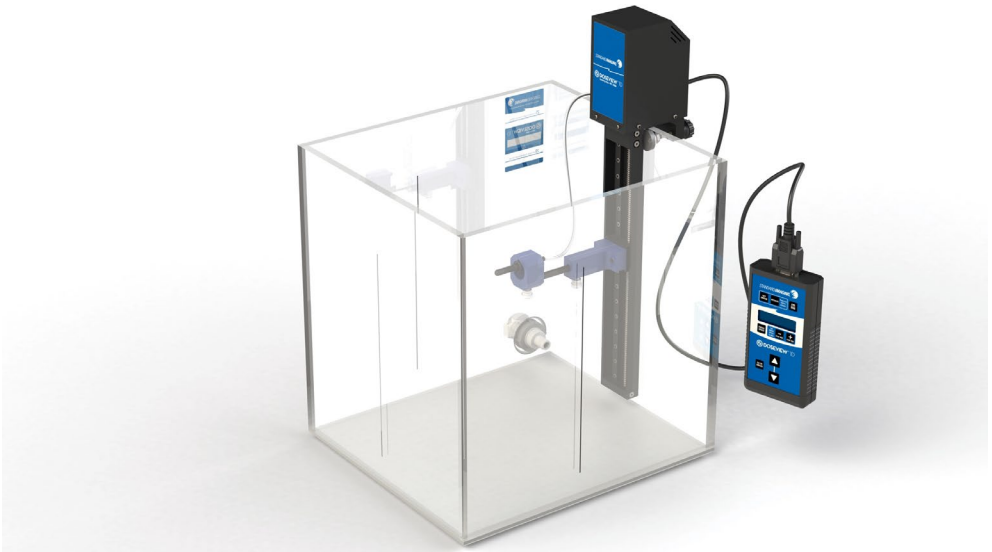
DoseView 1D

- ✓ Easy 3 point leveling
- ✓ Automatic, Customizable Data collection with included DV1D software
- ✓ 0.05 mm accuracy for consistent QA



SuperMAX

EXRADIN

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DOSEVIEW™ 1D

AUTOMATE ABSORBED DOSE TO WATER MEASUREMENTS

Automatically acquire depth-dose measurements in a durable, TG-51 and TRS-398 compliant 1D water scanning system.

Design Ensures 0.05 mm Accuracy and Repeatable Scans

- 0.05 mm precision over the entire arm travel distance.
- Engraved vertical lines expedite phantom alignment with room lasers.
- Two fill lines accommodate 20 cm and 25 cm depth measurements.

Easily Adapts to Fit Range of Detectors

- The water equivalent ion chamber bracket fits most thimble ion chambers and rigid stem parallel plate chambers.
- Alignment lines help quickly place the centriod of a detector at isocenter.
- Optional brackets available for vertically-oriented and stemless detectors.

Remote Operation with Handheld Controller

- Establish origin position and automatically return to origin with the press of a button.
- Three movement modes; fast, slow and step (0.01 mm to 100 mm).
- Easily toggle between cm/mm.
- Controller recalls the saved position for operation outside the vault.

AUTOMATIC 1D SCANNING ROUTINES WITH DOSEVIEW 1D SOFTWARE

Fully Automate Depth Dose Data Collection With Doseview 1D and the Supermax or Max 4000 Electrometers

- Customize step sizes.
- Automatically accounts for water settling.
- Multiple measurements at each probe position.
- Percent Depth-Dose data plotted in real-time.
- Quickly export data to a spreadsheet (.csv).
- Optional Chart displays: View rate or chart measurements plotted against depth (Table View) or time (Real-time View).
- Averaging mode: Automatic averaging of sequential readings.
- Streaming rate mode: Record unfiltered 10 hz rate readings for immediate measurement feedback.

Remote Operation of Scanning Arm

- View detector depth in real-time.
- Set/move to origin.
- Move to specific depth.
- Step probe by customizable distance.

DOSEVIEW 1D SPECIFICATIONS

DIMENSIONS

1D SCANNING ARM	*Height:* 48.26 cm (19.0 in) *Width:* 6.77 cm (2.67 in) *Length:* 9.44 cm (3.72 in)
WATER TANK REF 91800	*Height:* 36 cm (14.17 in) *Width:* 30 cm (11.81 in) *Length:* 34 cm (13.39 in)
WATER TANK REF 91810	*Height:* 36 cm (14.17 in) *Width:* 40 cm (15.75 in) *Length:* 42 cm (16.54 in)

WATER TANK MATERIAL Clear acrylic 0.95 cm (0.375 in)

WEIGHT

1D SCANNING ARM	1.36 kg (3 lbs)
HANDHELD CONTROLLER	0.23 kg (0.5 lbs)
WATER TANK *(REF 91800, empty)*	6.35 kg (14 lbs)
WATER TANK *(REF 91810, empty)*	10.43 kg (23 lbs)

MAX SCANNING ARM TRAVEL 27.5 cm (10.8 in)

IONIZATION CHAMBER HOLDER DIAMETER ACCOMMODATION

Max: 20 mm (0.79 in) *Min:* 6 mm (0.24 in)

BACKSCATTER CLEARANCE AT 25 CM DEPTH

~ 8 cm (3.1 in) including phantom base

ACCURACY OF POSITION ± 0.05 mm (0.002 in) over entire 275.00 mm

REPEATABILITY OF POSITION ± 0.05 mm (0.002 in) over entire 275.00 mm

OPERATING CONDITIONS

PRESSURE	680 – 800 mm Hg
TEMPERATURE	10 – 40 °C
RELATIVE HUMIDITY	30 to 75%, non-condensing

STORAGE CONDITIONS

TEMPERATURE	-40 to 70 °C
RELATIVE HUMIDITY	0 to 95%, non-condensing

CABLING 100 ft extension cable provided (standard RS-232 configuration)

POWER REQUIREMENTS AC OUTPUT 12 VDC @ 1.25 A

OPTIONAL DETECTOR BRACKETS

PTW Markus® (REF 70850)

PTW Roos® (REF 70852)

Vertical Diode Holder (REF 70851)

CONFORMITY CE

SOFTWARE REQUIREMENTS

Operating System	Windows Vista® Windows® 7
Connectivity	9-pin, RS-232 serial port or USB port with USB to RS-232 adapter

DV1D

HOME

Brochure 1 of 1

SuperMAX Electrometer

- ✓ Premier two-channel, reference grade electrometer
- ✓ Built-in Detector library
- ✓ Easy to navigate color touch screen interface
- ✓ Exradin W1 Scintillator Integration

Brochure

Home

SUPERMAX ELECTROMETER

DOSIMETRY, ADVANCED

An intuitive user-interface and a host of innovative features make the SuperMAX the premier reference-grade electrometer on the market

THE PREMIER, REFERENCE-GRADE ELECTROMETER

The SuperMAX Electrometer is the culmination of one simple notion – *surpass expectations for a reference-grade electrometer.* Each aspect of the SuperMAX has been engineered to integrate seamlessly into clinical quality assurance, forming the preeminent dosimetry tool available.

- **Superior Accuracy and Stability**
  Standard Imaging's legacy of accuracy, and rounds of rigorous testing, ensure the SuperMAX exceeds requirements for reference grade instruments. This exceptional stability allows for measurement after only one minute of warm-up time.
- **Touchscreen Operation**
  A color, touchscreen interface has an on-screen keypad and pull-down menus for easy operation.
- **Unmatched Versatility**
  Two measurement channels with independent control over range, bias voltage and applied factors, and an extensive range are ideal for external beam IMRT, brachytherapy and stereotactic radiosurgery.

"The SuperMAX is a great electrometer. Its interactive screen is big and easy to see and use. Its small footprint makes it possible to set-up on even the most crowded work surface. Most importantly, it is fast to warm up, precise and very reliable. I particularly like the fact that the SuperMAX will store calibration factors for all of my chambers, as well as all my readings from our evening of data collecting. The SuperMAX is a great piece of gear."

David J. Misisco, MS
Medical Physicist
Community Hospital of the Monterey Peninsula

SuperMAX Electrometer shown with the Exradin A19 Ion Chamber and the Exradin A10 Ion Chamber

SuperMAX

HOME

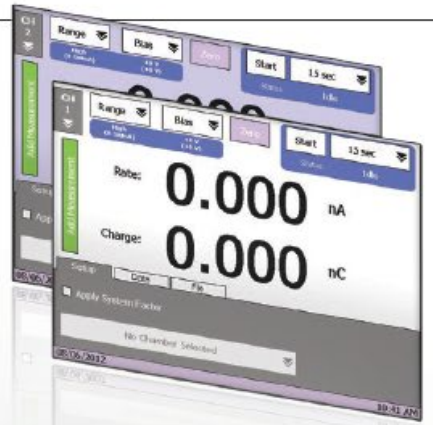
Brochure 1 of 3

Two Independent Channels

The SuperMAX Electrometer has two measurement channels with independent control over range, bias voltage and applied system factors. Both channels have an extensive range (0.001 pA to 500.00 nA, 0.001 pC to 999.9 µC) with automatically scaling units, ideal for a spectrum of applications, including:

- Cross calibration between two chambers
- Isocenter versus off-axis comparisons
- In-air versus in-water comparisons

These channels can be viewed individually in full screen or together in a split-screen interface, with the option to display the ratio of the two channels.



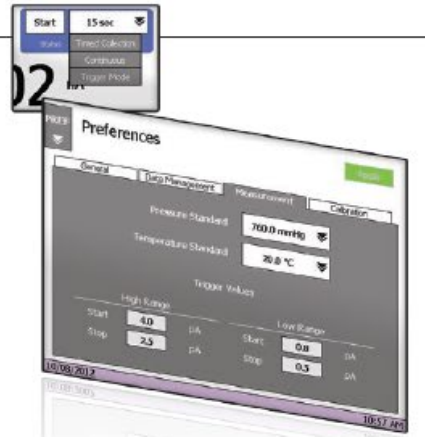
Flexible Collection Modes

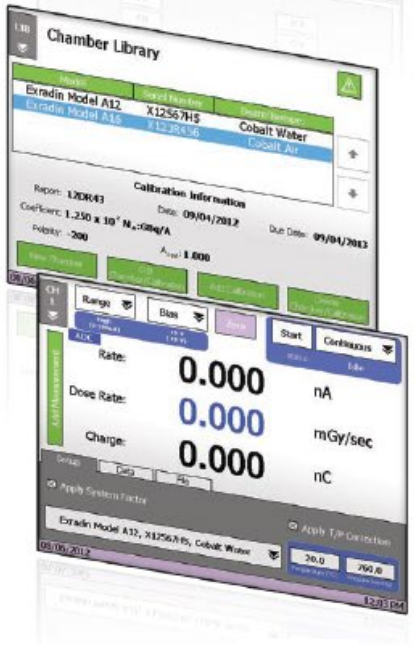
The SuperMAX Electrometer has three charge collection modes, facilitating data acquisition in a variety of clinical applications.

- Timed Charge Collection: obtain measurements in 1 second intervals from 1 second – 24 hours. Perform these measurements sequentially without re-zeroing the electrometer.
- Continuous Charge Collection: Manual start/stop measurement for an unlimited duration.
- Triggered Charge Collection: Automatically start, stop and save measurements at custom thresholds for high and low ranges. This mode is ideal for external beam measurements.

Comprehensive Detector Library

A detector library built into the SuperMAX can store over 100 calibrations and/or system factors, which are easily input using a step-by-step wizard. Once entered, these corrections can be quickly sorted and applied for real-time display of dose or dose rate values. Factor-applied measurements are shown side-by-side with raw data for increased analysis. No extra PC software or cables are needed to take advantage of this functionality.





SuperMAX

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SuperMAX

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Brochure 3 of 3

Easily Save and Export Data

As charge collections are completed, measurements are automatically stored in a time- and date- stamped list. Rate or dose rate measurements can be added manually by tapping the "Add Measurement" button. At any time, this list can be exported to the USB flash memory in .csv or .txt files, transferred to a PC and opened in Microsoft Excel or other spreadsheet applications.

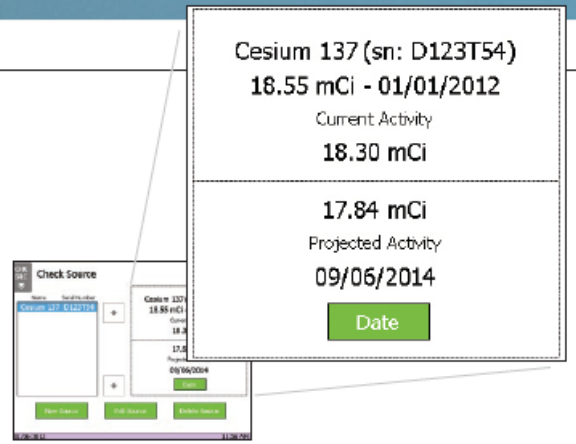
Exradin W1 Scintillator Integration

The Exradin W1 Scintillator is a new detector with characteristics that closely mimic water, negating many measurement corrections required with other detectors. When used in conjunction, these tools effectively eliminate Cherenkov Effect without the need for extraneous calculations. Two dedicated modes in the SuperMAX provide an intuitive interface for scintillator setup and measurement.

the Exradin W1 Scintillator

Check Source Utility

The SuperMAX can store over 100 sources for quick projected strength calculations. Enter the known activity on a given date and the Check Source Utility can display either the current strength or calculate future strength.



SUPERMAX (REF 90018) SPECIFICATIONS

DISPLAY RANGE	
RATE:	*Low Range* 0.001 pA – 500.0 pA, 1 fA resolution *High Range* 0.001 nA – 500.0 nA, 1 pA resolution
CHARGE:	*Low Range* 0.001 pC – 999.9 μC, 1 fC resolution *High Range* 0.001 nC – 999.9 μC, 1 pC resolution
DIMENSIONS	*Height:* 8.1 cm, 3.2 in *Width:* 26.7 cm, 10.5 in *Length:* 21.1 cm, 8.3 in *Weight:* 2.4 kg, 5.3 lbs
CHARGE COLLECTIONS	
TRIGGER:	Automatic start, stop, reset and save data based on user defined thresholds (*Start:* 0.2 – 9.9 pA; *Stop:* 0.1 – 9.8 pA)
TIMED:	User set duration (*Range:* 1 s – 24 hours; *Increment:* 1 s)
CONTINUOUS:	Unlimited duration with manual stop
REAL TIME CLOCK	Date and time stamp for all measurements for easy identification
INTERNAL MEMORY	Store preferences, >100 sources, >100 chamber/system factors
RANGE SWITCHING	User selectable — High or Low
CONFORMITY	CE 93/42/EEC Reference class according to IEC 60731
DISPLAY	6.4" color TFT, touchscreen
INPUT	(2) BNC two lug, triaxial connector
BIAS VOLTAGE	Nominal ± 1000 volt bias
USER SETTINGS:	– 1000 to – 100, 0; 100 to 1000 (set in 1 volt increments)
POWER	100-240 VAC, 0.5 A max, 50/60 Hz input to external power supply, 9 VDC, 1.7 A power supply output to electrometer input, UL/TUL listed power supply
ZEROING	Automatic zero function, user activated
OUTPUT	(2) USB ports
OPTIONS	
SuperMAX Accessory Kit (REF 72245) *Includes extra stylus, extra USB flash drive, and set of 5 extra screen protectors*	
SuperMAX Electrometer with TNC connector (REF 90018-C)	

PERFORMANCE SPECS

RESOLUTION	High Range: 0.001nA Low Range: 0.001pA	IEC 60731 (Reference Class) requirement: ± 0.25%
MEASURING RANGE	High Range: 0.400 nA – 500.0 nA	Low Range: 0.400 pA – 500.0 pA
MEASURING RANGE (CHARGE)	High Range: 0.400 nC – 999,999 nC Low Range: 0.400 pC – 999,999 nC	
REPEATABILITY	± 0.1%	IEC 60731 requirement: ± 0.5%
LONG-TERM STABILITY	± 0.5%	over one year
STABILIZATION TIME	± 0.5%	IEC 60731 requirement: ± 0.5% of value at 1 hr for measurements taken at 15 min and 6 hrs
ZERO DRIFT	High Range: < ± 0.1% Low Range: < ± 0.25%	IEC 60731 requirement: ± 0.5%
ZERO SHIFT	High Range: < ± 0.1% Low Range: < ± 0.25%	IEC 60731 requirement: ± 0.5%
NON-LINEARITY	± 0.2%	IEC 60731 requirement: ± 1.0%
RESPONSE TIME	High Range Rate: 3 s	Low Range Rate: 15 s All Ranges Charge: < 0.5 s

Specifications subject to change without notice.

Exradin Ion Chambers

- ✓ Waterproof construction backed by a 5 year warranty
- ✓ Homogeneous materials throughout minimize measurement perturbations
- ✓ Available in MR-Compatible versions
- ✓ A standard in dosimetry measurements for over 40 years

DV1
D
SuperMAX

Brochure

Home

ABSOLUTE DOSIMETRY

STANDARD IMAGING

UNCOMPROMISING QUALITY

The standard in dosimetry measurements for over 40 years.

A Global Reputation for Excellence

For over 40 years top research institutes and standards laboratories world-wide have used Exradin Detectors for a broad range of dosimetry measurements in diverse radiation environments.

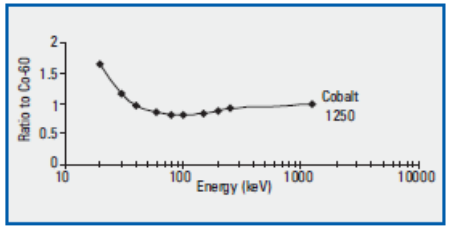
The Exradin line continues to build upon vetted ion chambers like the Exradin A12 and Exradin A5 with advanced microionization chambers. Our passion for metrology, expertise in engineering and dedication to durability ensures that each detector we produce embodies this tradition of quality workmanship and exacting precision.

EXRADIN A11 ION CHAMBER

The Exradin Advantage

Waterproof A11 Roos*-type chamber may be operated while fully submerged without any protective sheath; ideal for repeated TG-51/TRS-398 dose distribution measurements in a water phantom.

- Waterproof construction eliminates the need for sleeves or protective coatings.
- Chamber vents through a flexible tube surrounding the triaxial cable; ideal for use in water or plastic phantoms.
- Excellent inherent conductivity negates the need for coatings found in other chambers, which can flake off and require careful handling.
- Collection efficiencies of 99.9% or greater.
- Exradin detectors feature some of the quickest settling times of any manufacturer.



EXRADIN

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EXRADIN A19 ION CHAMBER

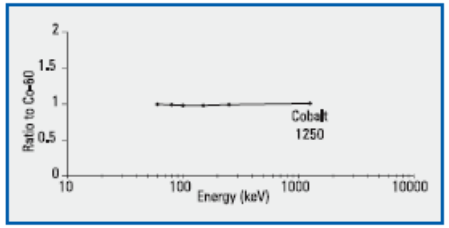
CLASSIC FARMER-TYPE

Inherently waterproof and designed to fit existing plastic phantoms.

The Exradin Advantage

The A19 fits existing plastic phantom cavities and build-up caps, limiting perturbation and minimizing settling time in clinical dosimetry measurements. This chamber is characterized for TG-51 procedures.

- Waterproof construction eliminates the need for sleeves or protective coatings.
- Chamber vents through a flexible tube surrounding the triaxial cable; ideal for use in water or plastic phantoms.
- The collecting volumes of Exradin ion chambers are defined by the guard, not an insulator, creating a significantly more stable signal than competing detectors.
- Axially symmetric design ensures a uniform isotropic response.
- Excellent inherent conductivity negates the need for coatings found in other chambers, which can flake off and require careful handling.
- Collection efficiencies of 99.9% or greater.
- Exradin detectors feature some of the quickest settling times of any manufacturer.



MR COMPATIBLE VERSION AVAILABLE

FEATURES

Versatile, for absolute dosimetry calibrations in water, air or other phantom material

- For water phantom measurements, the inherently waterproof ion chamber vents through a flexible tube surrounding the triaxial cable equilibrating the air pressure within the ion chamber to the ambient room pressure
- Matching 2.8 mm thick Cobalt-60 build-up cap of C552 Shonka air-equivalent plastic is provided for air calibrations and measurements. Additional build-up caps of Delrin and brass are available
- The Classic Farmer-type Chamber Design assures the ion chamber will fit existing plastic phantom cavities and existing build-up caps
- Fits into standard cesium check sources
- Maintains the high quality internal design of the Exradin A12 Farmer-type Chamber

EXRADIN CLASSIC FARMER-TYPE CHAMBER (REF 92734) SPECIFICATIONS

COLLECTING VOLUME	0.62 cc	MAXIMUM POLARIZING VOLTAGE	1000 volts
CENTROID OF COLLECTING VOLUME (from exterior tip)	12.8 mm	WATERPROOF	yes
OUTSIDE DIAMETER OF SHELL COLLECTING VOLUME	7.0 mm	INCLUDED BUILDUP CAP	Co-60
INSIDE DIAMETER OF SHELL COLLECTING VOLUME	6.0 mm	PHOTON ENERGY RANGE	30 kV to 20 MV
SHELL WALL THICKNESS	0.5 mm	ELECTRON ENERGY RANGE	4 MeV to 22 MeV
COLLECTOR DIAMETER	1.0 mm	PARAMETERS NEEDED TO CALCULATE N_{gas} FOR AAPM PROTOCOL TG21 OR N_D FOR IAEA PROTOCOL TRS-277	
COLLECTOR LENGTH	21.6 mm	k_m	1.006
SHELL, COLLECTOR AND GUARD MATERIAL		k_{att} or A_{wall}	0.991
C552 Shonka air-equivalent plastic	1.76 g/cc	$k_m * k_{att}$	0.997
NOMINAL AIR KERMA CALIBRATION FACTOR*	5 R/nC	TO DETERMINE THE k_Q FACTOR FOR AAPM, PLEASE REVIEW TECHNICAL NOTE 4603 AVAILABLE ON THE STANDARD IMAGING WEBSITE: WWW.STANDARDIMAGING.COM	
NOMINAL LEAKAGE	$<10^{-15}$ amps		

** Nominal calibration factor for energies greater than 200 keV. Specifications subject to change without notice.*

EXRADIN

HOME

Brochure 2 of 2

GrID

MRI Geometric Distortion Phantom - Assess MR image distortion in all three axes to identify geometric inaccuracies.

iQA

✓ 3D Volume

Comprised of 9 Image Planes with 4,689 individual Spherical Fiducials utilizing the maximum Scan Plane Field of View.

✓ Maximum Scan Plane Field of View

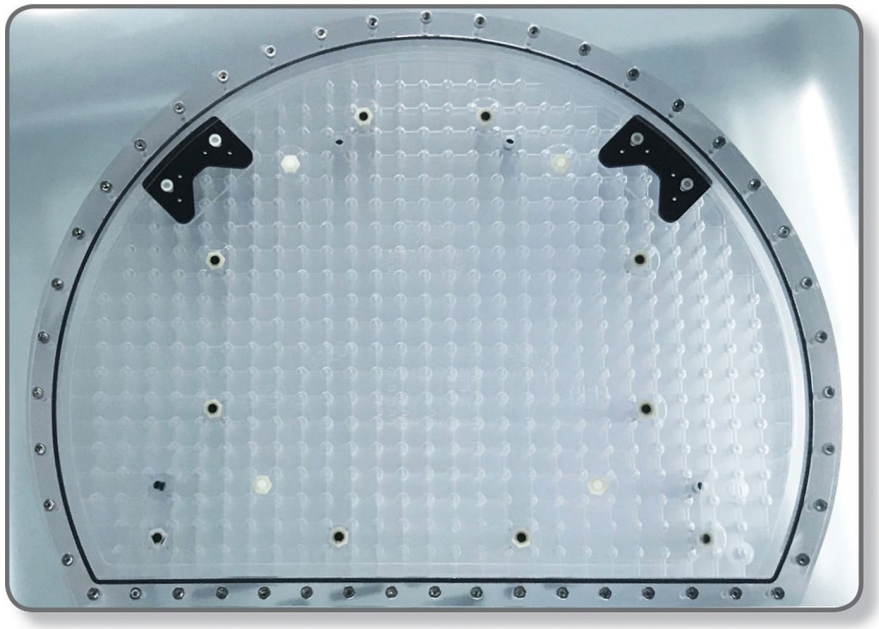
Solid Acrylic Construction that can be scanned in Axial, Saggital, and Coronal orientations.

HOME

GrID

MR Distortion QA

- MR Image Distortion
- 6 Axis Verification
- Largest Bore Size
- Axial, Sagittal, Coronal Orientations
- On-Site Installation Included



iQA

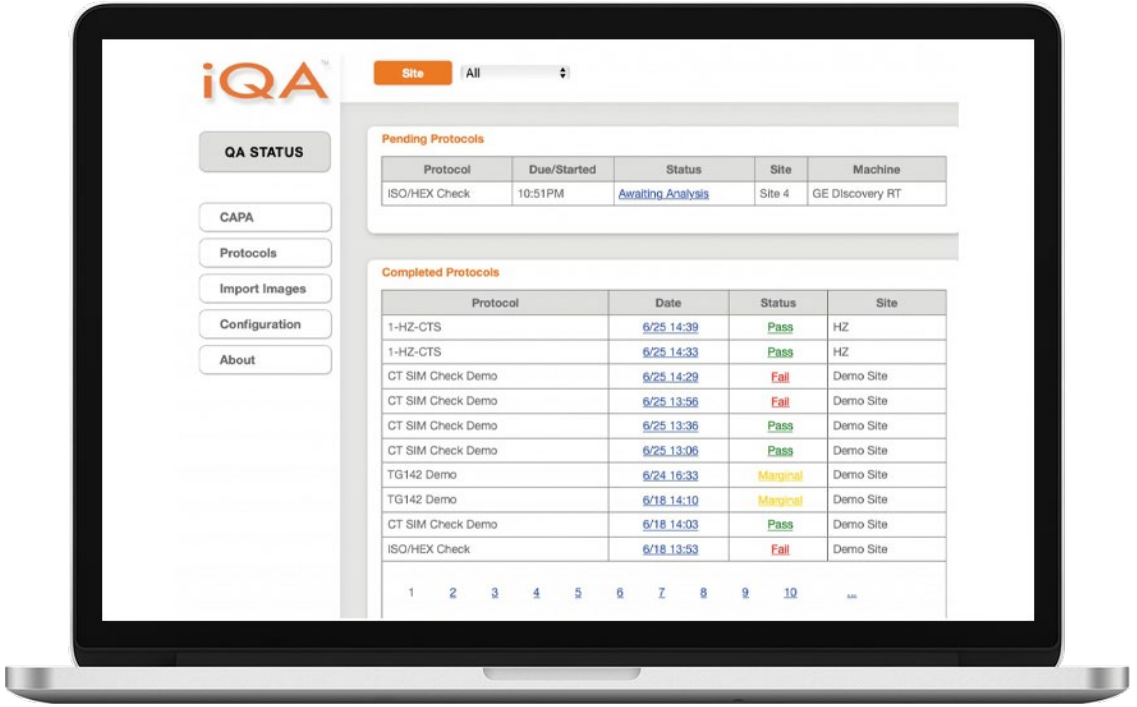
HOME

iQA

CT and MR Auto-Analysis Software

Implement and standardize routine physics QA processes and automatically analyze images and generate reports for phantoms.

✓ .



GrID

HOME

iQA

✓ Therapist-Friendly Workflow

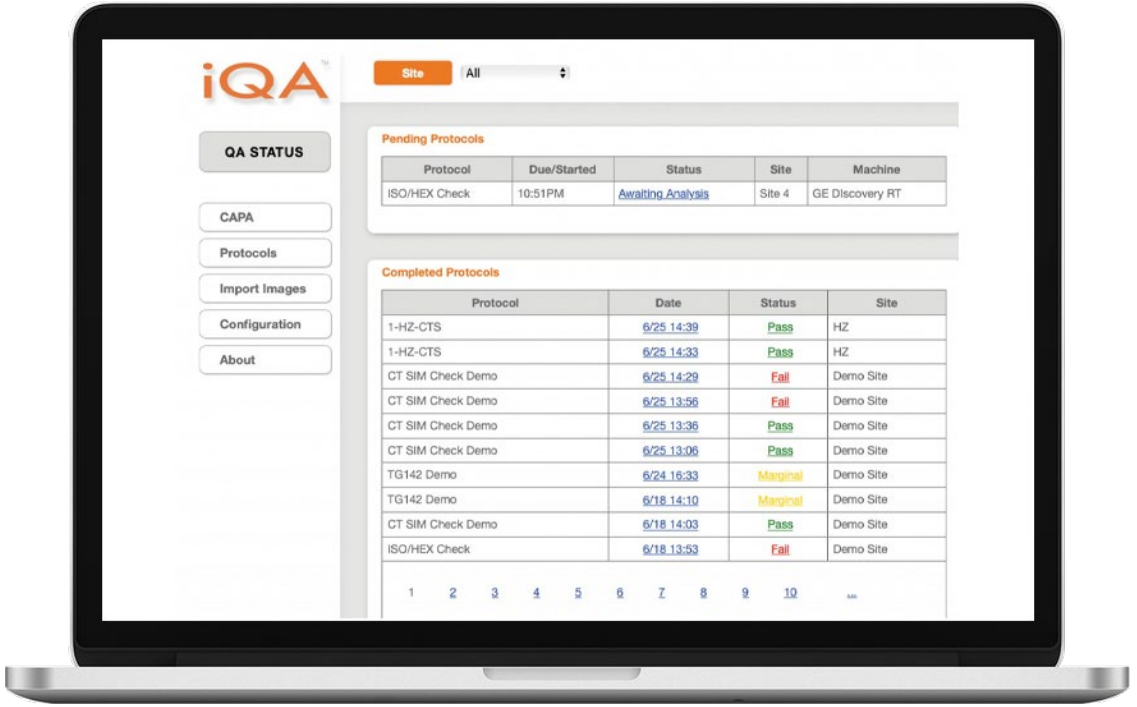
Controlled and repeatable test protocols with standardized critical measurements. It's a therapist-friendly process that effortlessly fits into your workflow. Simplified interface with step-by-step procedures.

✓ Automated Analysis

Software supports multiple sites and machines with automatic MRI distortion, daily IGRT and CT/SIM QA, administrator-defined QA analysis.

✓ Trending and Reports

View data from all sites in one location with a database that maintains historical data. Auto-generate reports and pass/fail results.



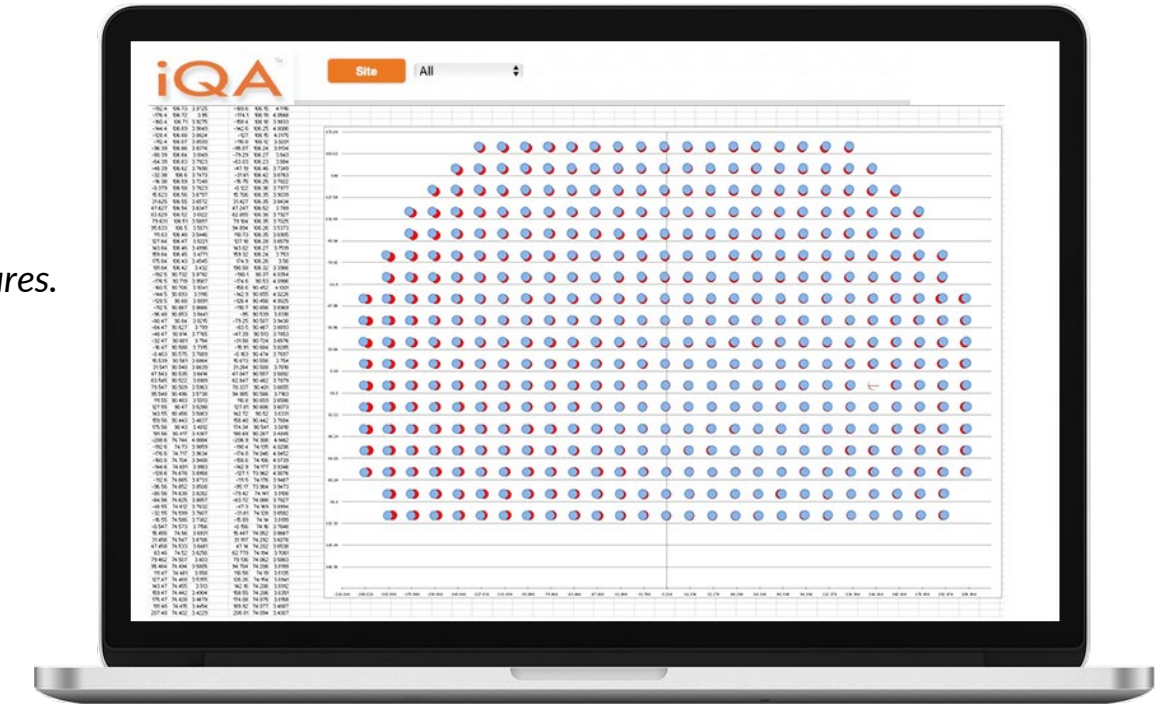
GrID

HOME

iQA

- ✓ Comprehensive, Collaborative Software

Support multiple sites and machines. Provides controlled, standardized, and repeatable QA procedures. Implement and standardize routine physics QA processes with this efficient, easy software.



GrID

HOME

ADAPTIVO Software

- ✓ Automated data collection, automated analysis
- ✓ Independent QA with both in-vivo dose monitoring and daily/cumulative 3D dose calcs using CBCTs
- ✓ Adaptive QA capability now

LinacView

IMSure

IMSure 3D

Brochure

HOME

PATIENT DOSIMETRY

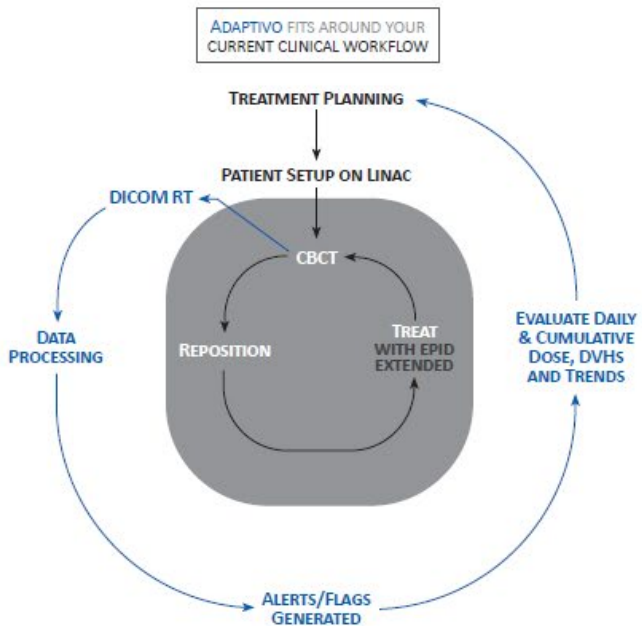
STANDARD IMAGING

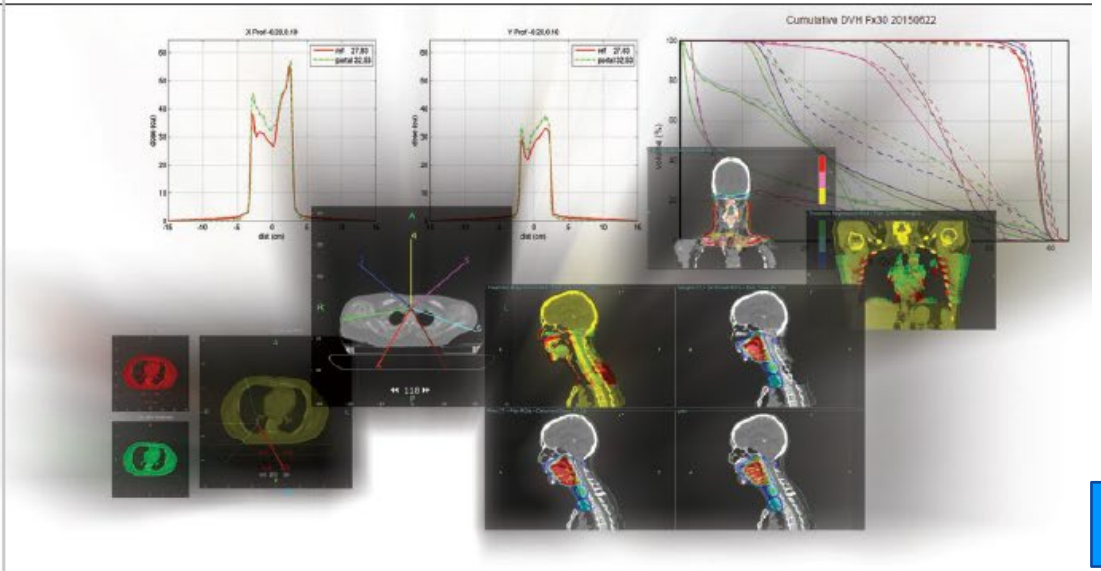
ADAPTIVO™

DELIVERED PATIENT DOSE

The only software that provides a true picture of patient and dose at each stage of treatment

ADAPTIVO PATIENT DOSIMETRY SOFTWARE DOES SOMETHING OTHER PATIENT DOSIMETRY SOLUTIONS CAN'T DO — track and report the dosimetric impact of changes in patient anatomy and positioning. The software automatically imports and analyzes patients, presents data in a summary dashboard, and sends alerts for dose deviations needing attention. Adaptivo delivers clinically relevant actionable results, improves treatment quality, is billing compliant, and outshines other patient dosimetry products.





Adaptivo

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Brochure 1 of 7

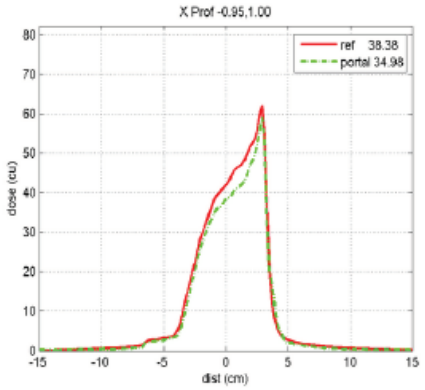
PATIENT DOSIMETRY

STANDARD IMAGING

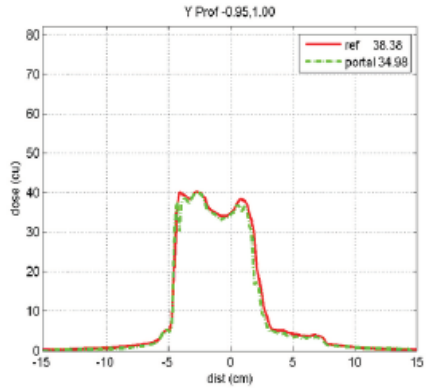
Adaptivo

Brochure 2 of 7

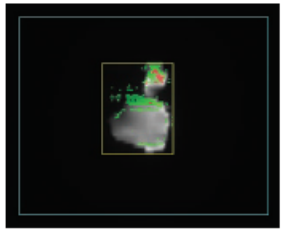
Portal Dose Profile (X)



Portal Dose Profile (Y)



Gamma Over Portal Dose



Delivery Results

No Phantom Needed

Verify Plan Delivery

PRETREATMENT

Adaptivo verifies IMRT and VMAT delivery using collected EPID images for quick and easy pre-treatment QA without the use of phantoms or additional detectors. The software communicates directly with the R&V system, and will automatically compare measured results to the predicted image. Adaptivo emails notification of either each pre-treatment delivery or only those that fail the acceptance criteria.

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PATIENT DOSIMETRY

STANDARD IMAGING

Adaptivo

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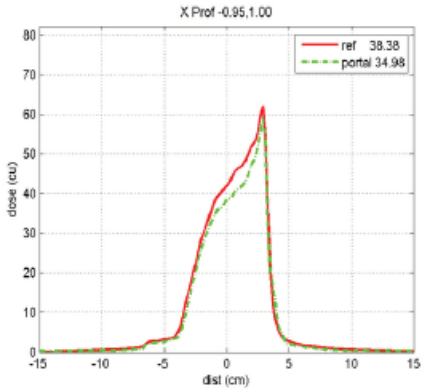
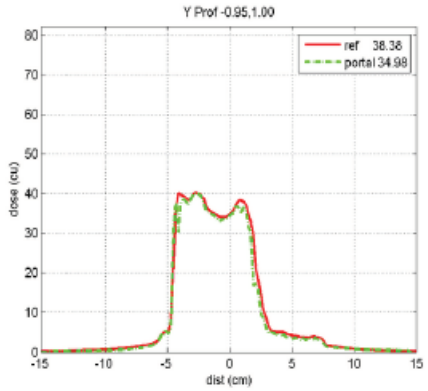
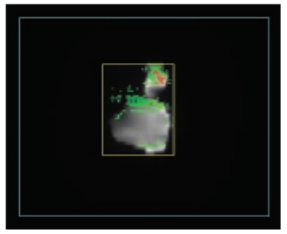
Portal Dose Profile (X)



Portal Dose Profile (Y)



Gamma Over Portal Dose



Delivery Results

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Adaptivo verifies IMRT and VMAT delivery using collected EPID images for quick and easy pre-treatment QA without the use of phantoms or additional detectors. The software communicates directly with the R&V system, and will automatically compare measured results to the predicted image. Adaptivo emails notification of either each pre-treatment delivery or only those that fail the acceptance criteria.

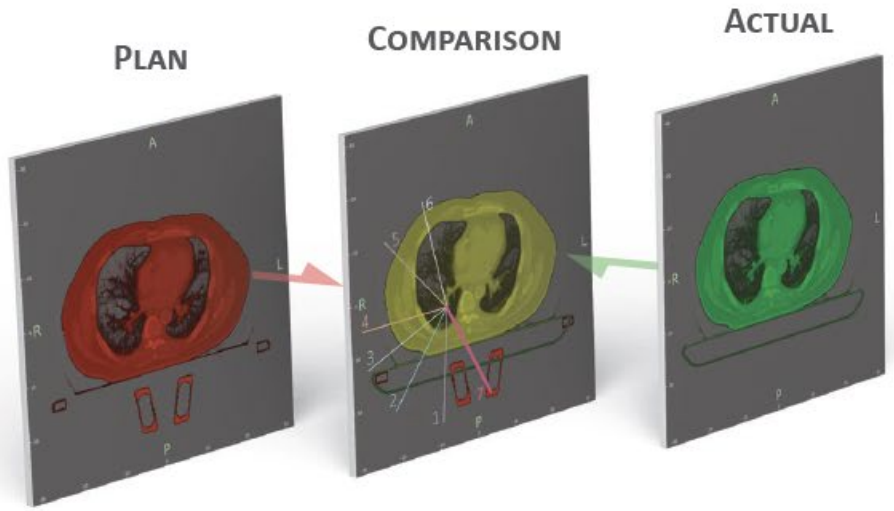
PRETREATMENT

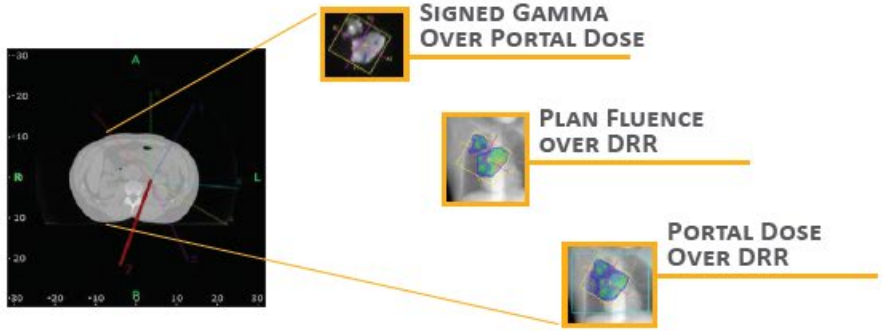
HOME

PATIENT DOSIMETRY

STANDARD IMAGING

DAILY COUCH CORRECTION





DAILY EXIT DOSE MONITORING

View per beam metrics, per fraction metrics, and gamma metrics

Adaptivo performs portal to calculated and portal to portal comparisons. The software monitors exit dose to expose unforeseen deviations from the treatment plan without adding time to your clinical workflow. This proactive monitoring allows for more responsive, informed decisions.

IN VIVO

Adaptivo

HOME

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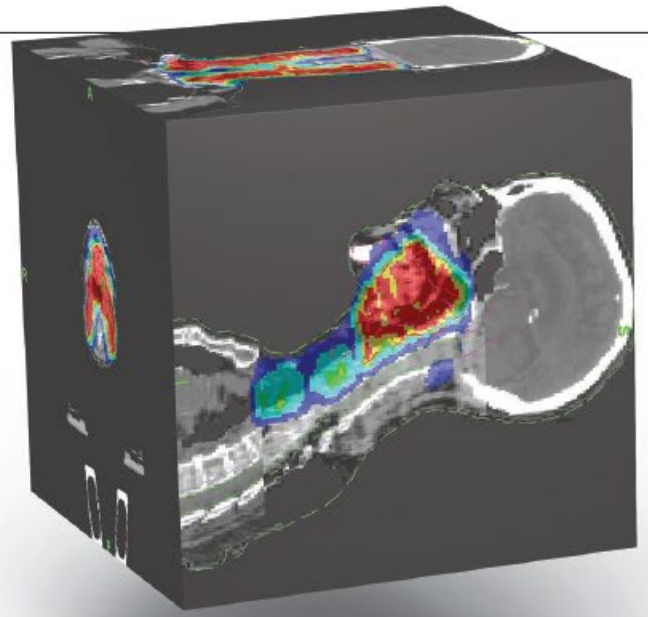
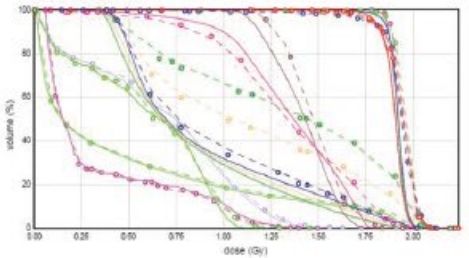
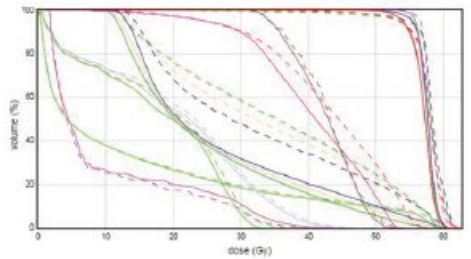
PATIENT DOSIMETRY

STANDARD IMAGING







ACCOUNT FOR DELIVERED DOSE

Review daily and cumulative DVH

Adaptivo automatically maps the original planned contours to the daily CBCT images, so DVH curves can be generated using the daily dose calculated on the daily image. This deformable registration ensures changes in tumor size, weight loss, etc. are factored into both daily & cumulative dose and dose volume histogram (DVH) tracking.

ADAPTIVE

Adaptivo

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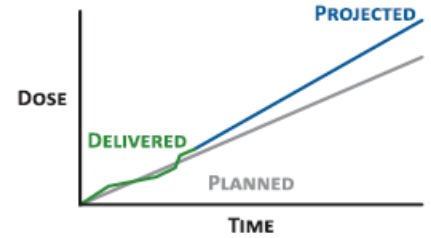
ADAPT WITH PROJECTED DOSE

Gain insights to improve patient treatment

ADAPTIVO

Adaptivo illuminates daily inconsistencies and cumulative dose deviations or trends that other software cannot detect. The complete view of delivered dose gives the data and confidence needed to validate necessary replanning. Radiation Oncologists can quickly judge whether a replan is required; focusing their attention on those plans that truly require altering, expediting the approval process and improving treatment quality.



DASHBOARD FLAGS

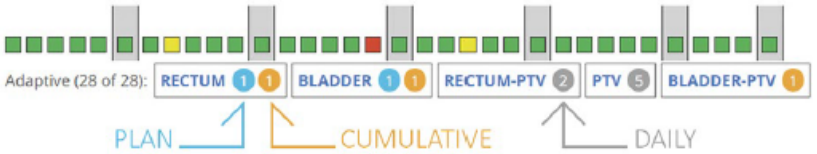
Results from all aspects of Adaptivo are accessible from the main dashboard screen.

GREEN FRACTION SQUARE
All beams passed gamma analysis of exit image.

YELLOW FRACTION SQUARE
One or more beams were in the warning region.

RED FRACTION SQUARE
One or more beams were in the alert region.

Grey shading around a square indicates that the analysis was performed using an average of several delivered fractions. Measured exit dose is compared with a predicted exit image, to ensure correct — not just consistent — delivery.



PLAN FLAGS
DVH analysis of the planned dose distribution informs you of planned doses that are outside recommended tolerances.

CUMULATIVE FLAGS
Cumulative dose tracking provides advance warning flags to indicate that doses are trending toward out of tolerance values.

DAILY FLAGS
3D dose calculation on the CBCT supports informed decisions for patient treatment alterations.

Adaptivo

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LinacView Software

- ✓ NEW! First product compatible with Elekta Unity
- ✓ Automated patient QA with minimal user intervention
- ✓ Provides results before the patient leaves

Adaptivo

IMSure

IMSure 3D

Brochure

HOME

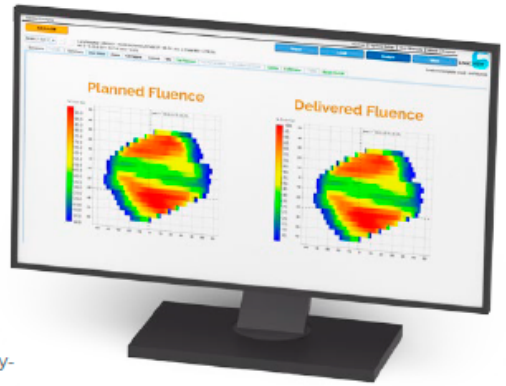
PATIENT DOSIMETRY

STANDARD IMAGING

LINACVIEW

INTEGRATED MONITORING QA

Effortless machine Quality Assurance for every fraction of every treatment



READY WHEN IT COUNTS

LinacView runs in the background ensuring that treatments are delivered according to prescribed treatment plans. When a clinically-relevant delivery problem occurs, LinacView sounds an alert automatically. A dashboard and comprehensive analysis tools help you to quickly understand the cause and impact of the event.

PRETREATMENT QA

Know the quality of a treatment plan before it's delivered and make logfile analysis part of the patient record. Billing compliant (77301).

QA DURING PATIENT TREATMENT

Know the impact of the delivered plan without user intervention and before the patient leaves the couch.

ADAPTIVE WORKFLOW QA

Options for daily closing of plan of the day to perform unique and automated QA for adaptive workflow. This feature supports Elekta Unity workflow.

TWO TYPES OF QA IN ONE PRODUCT

LinacView separates quality assurance into two levels:

Clinically-Relevant QA

- Fluence Comparisons
- Gantry and Collimator Angles
- Plan Specific MU
- Beam Off Lags

An audible alarm sounds and notifications are sent to physics staff.

Machine Performance QA

- Carriages, Jaws, Leaves
- Table Positions
- Monitor Unit Rate

No alarm or notifications. Used to predict future machine maintenance needs.

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PRINCIPLES OF OPERATION

- LinacView has algorithms that compare machine logfiles to DICOM RT Plans.

CENTRAL AUDIBLE ALERT

- When any machine sends a logfile to LinacView that shows clinically-relevant errors, an alert will sound (also notifications by email or text will occur).

SUMMARY RT PLANS

- LinacView can create summary RT Plans from "composite" logfile data. This can be useful at the end of treatment or during treatment if a delivery error occurs. These new RT Plans can be reimported into your treatment planning system where dose can be recalculated using the same algorithm as was used to create the plan. Your physician can then compare results in a familiar environment.

IMPROVED PRE-TREATMENT QA

- When you do pre-treatment QA, LinacView will get logfiles and analyze them. If your results from your planar dose analysis device are not satisfactory, you can check them against LinacView which will tell you how accurately your plan was delivered. You can also use LinacView's Modulation Complexity Score to evaluate the relative complexity of your plan. Billing compliant (77301).

FULLY CUSTOMIZABLE

- Almost every aspect of LinacView can be customized including tests to be executed, alert and error thresholds, physicist notifications, user permissions, and display parameters.

SUMMARY

- To use LinacView, you only need to add two steps to your workflow: 1) sending approved RT Plans to the LinacView folder, 2) analyzing results if a delivery problem is identified. Since the vast majority of treatments are delivered without error, LinacView will not normally affect your clinical workflow.
- LinacView may be used with Varian and Elekta linacs and all major treatment planning systems.

ADDITIONAL FEATURES

- Monitor one or more machines at once
- Produce PDF performance reports
- Compare fluences using difference indices
- Store results in a database for anytime access.
- Requires internet, but no additional hardware!

LINACVIEW SOFTWARE/COMPUTER REQUIREMENTS

Operating System	Windows 10 - 64-bits Recommended
RunTime Environment	Java 8 x64
Processor	Intel i7 - 2.5 GHz or greater
Memory	4 GB free RAM or greater
Hard Drive	50 GB
Screen Resolution	1920 x 1080 or greater
Local Area Network / Internet Access	Required
Speakers	Allow audible alerts, if desired

Memory requirements assuming 15 to 30 IMRT treatments per day are 15 – 180 Mb/Day. LinacView is compatible with logfiles from Varian and Elekta linacs. Windows® is a registered trademark of Microsoft Corporation. Specifications subject to change without notice.

LinacView

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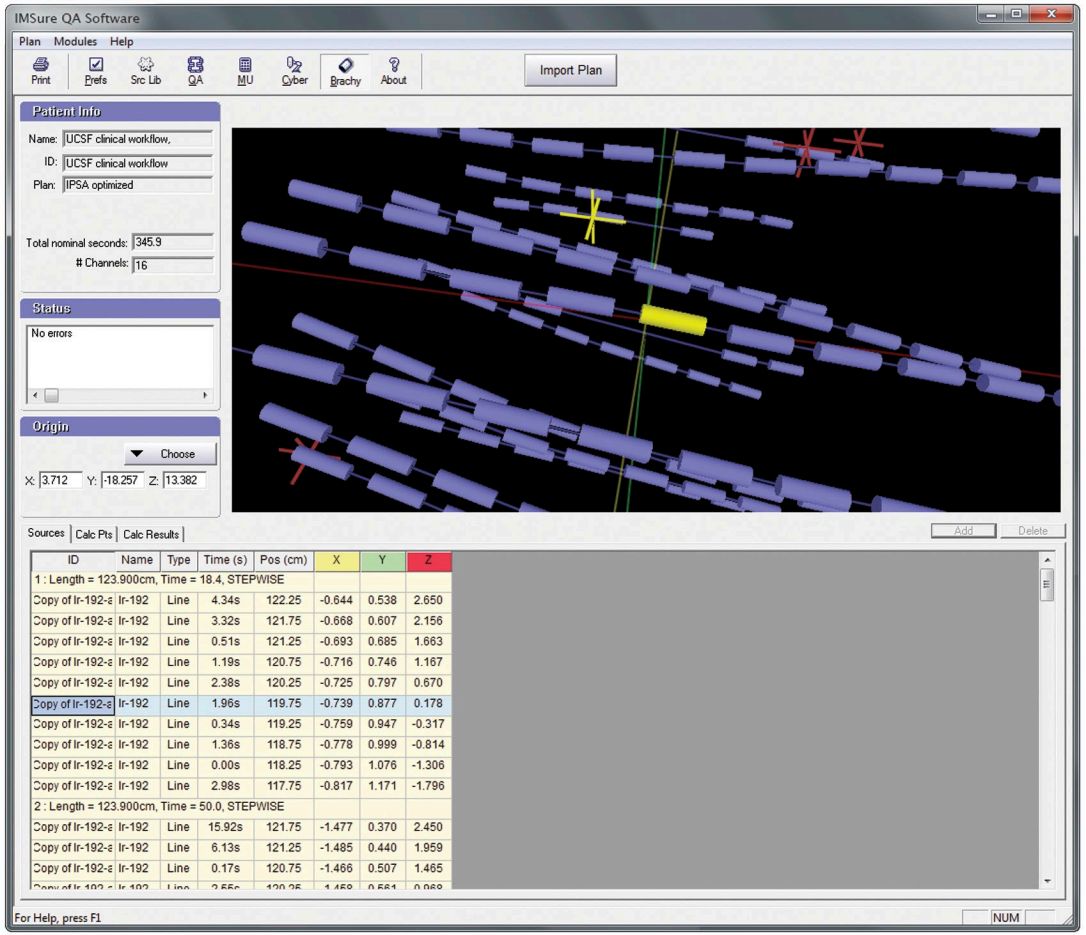
IMSure QA Software

- ✓ Efficient secondary checks for patient QA treatment plans
- ✓ One simple, proven, cost-effective QA solution for multiple modalities
- ✓ Proven integrated Brachytherapy, CyberKnife and Linac QA modules
- ✓ Not too complex, not too simple, just right



Adaptivo

LinacView

IMSure 3D

Brochure

HOME

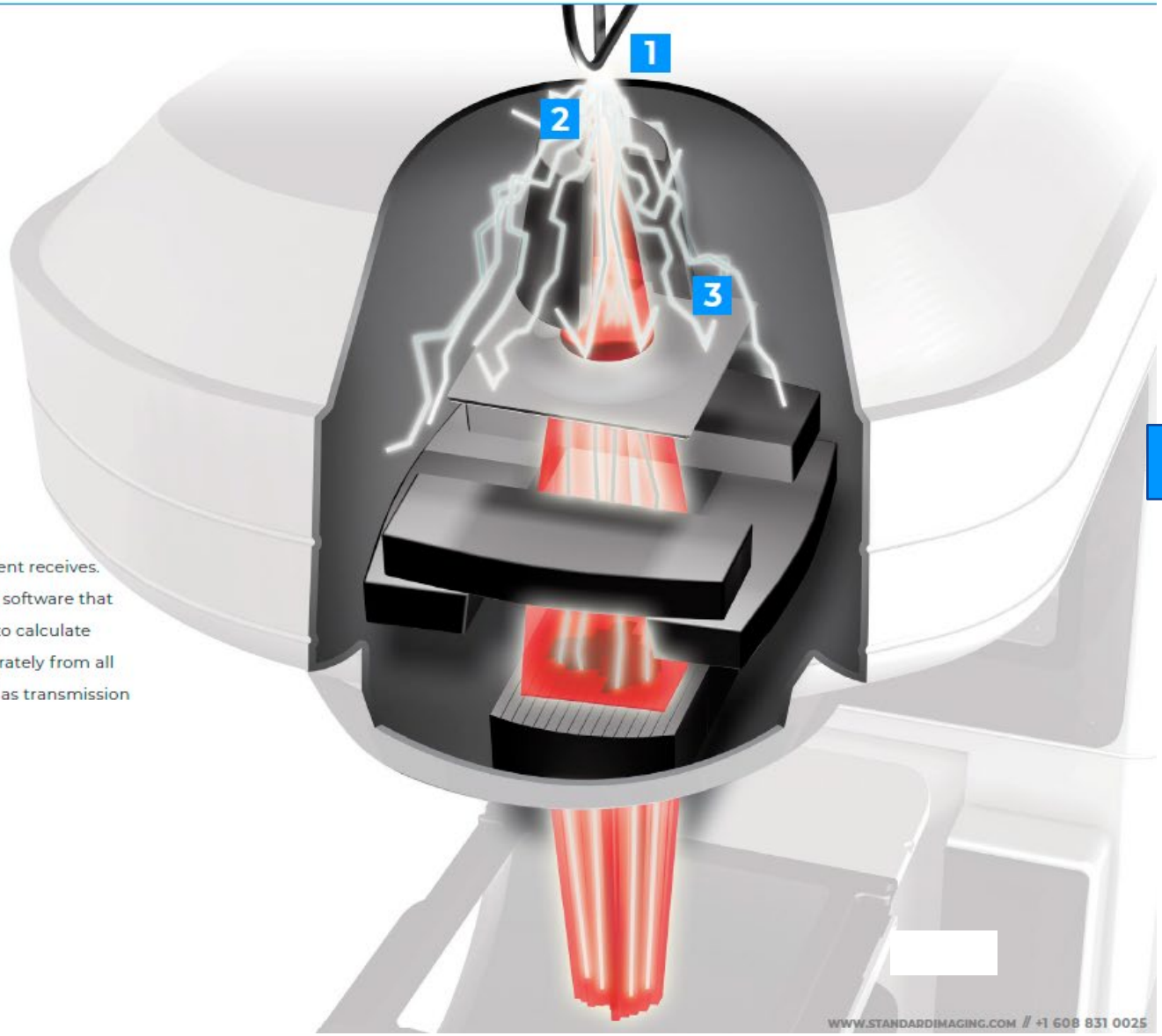
PATIENT DOSIMETRY

STANDARD IMAGING

IMSURE QA™ SOFTWARE

EXPEDITE ACCURATE SECOND CHECKS OF PATIENT PLAN

- Support of VMAT, IMRT and 3D Conformal plan calculations.
- Import of patient images and structure sets allows for automatic effective depth calculations.
- Increase accuracy through use of a 3-Source Model.
- Review using a simple user-friendly, single-page interface



1 — PRIMARY PHOTON SOURCE: TARGET
2 — SCATTER PHOTON SOURCE: FLATTENING FILTER
3 — SCATTER PHOTON SOURCE: PRIMARY COLLIMATOR

THE 3-SOURCE MODEL

In this illustration of a linac head, the red beam represents the primary photon source and the white lines show radiation scattered by the primary collimator and the flattening filter. Some scattered radiation may leak from the head and reach the patient through the jaws and multi-leaf collimator, contributing up to 12% of the dose the patient receives. IMSure QA is dose calculation software that uses a 3-source beam model to calculate the contribution to dose accurately from all three of these sources as well as transmission through jaws & MLC.

IMSure

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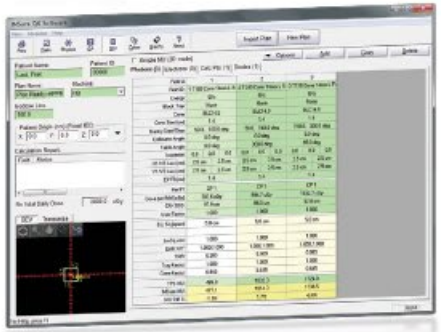
HOME

VERSATILE SECOND CHECK SOFTWARE

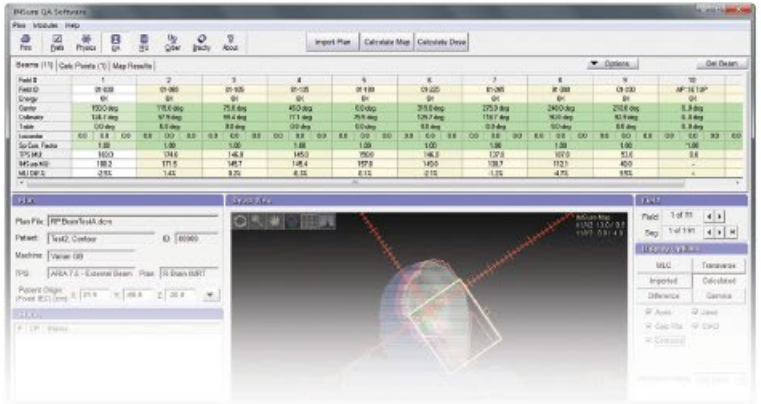
SUPPORTS OPEN BEAMS, BEAMS WITH BLOCKS, STEREOTACTIC CONES & WEDGED BEAMS



ADVANCED FEATURES

IMSure QA Software includes many advanced features allowing you to streamline your plan QA.

- **In-vivo measurement support** – IMSure QA automatically calculates an expected reading for a diode placed at the surface in relation to the isocenter or any valid calculation point. A printable comprehensive setup report allows for easy setup and reporting of measured results
- **Multiple calculation points** – Import unlimited points of interest from your treatment planning system or manually enter these for more complete plan evaluation
- **Block editor** – An interactive block editor allows for the creation of standard or island blocks or editing of block shapes imported from your treatment planning system
- **Heterogeneity correction** – Import CT images and structure set for automatic calculation of effective depths in IMSure QA.
- **.decimal compensator support** – Utilizing a full convolution algorithm, IMSure models the scatter, beam hardening effects and field-size dependencies to calculate a true compensator factor for even the most complex .decimal filters.



THOROUGH STEREOTACTIC QA

Calculate and confirm cone-based or MLC-based stereotactic treatments, including conformal and dynamic arcs. Create separate stereotactic and cone models at each energy in the physics module to accurately represent small fields found in stereotactic plans.

CYBERKNIFE PLAN VERIFICATION MODULE

The Cyberknife module quickly and easily validates monitor units and dose for Raytrace and Monte Carlo plans created on the MultiPlan® treatment planning system. Color coding immediately allows you to recognize individual projections that are outside tolerance.

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Brochure 2 of 3

PATIENT DOSIMETRY

STANDARD IMAGING

EASY MONITOR UNIT VERIFICATION

SECONDARY CHECK OF YOUR TREATMENT PLAN IN ONLY TWO STEPS

COMPREHENSIVE VERIFICATION OF YOUR ENTIRE PLAN

The Stanford University 3-Source Model considers the dose contribution from the primary photon source located at the target, a scatter photon source located at the primary collimator, and a scatter photon source positioned at the base of the flattening filter, resulting in accurate dose calculations.

Traditionally, IMRT QA may include a phantom placed on the couch with an ion chamber to check point dose, In addition, for 2D review a chamber array in a phantom or film placed between the phantom slabs can be used to measure fluence or dose for more detailed plan evaluation. IMSure QA completes both parts of the classic IMRT protocol, point dose verification and a 2D fluence check.

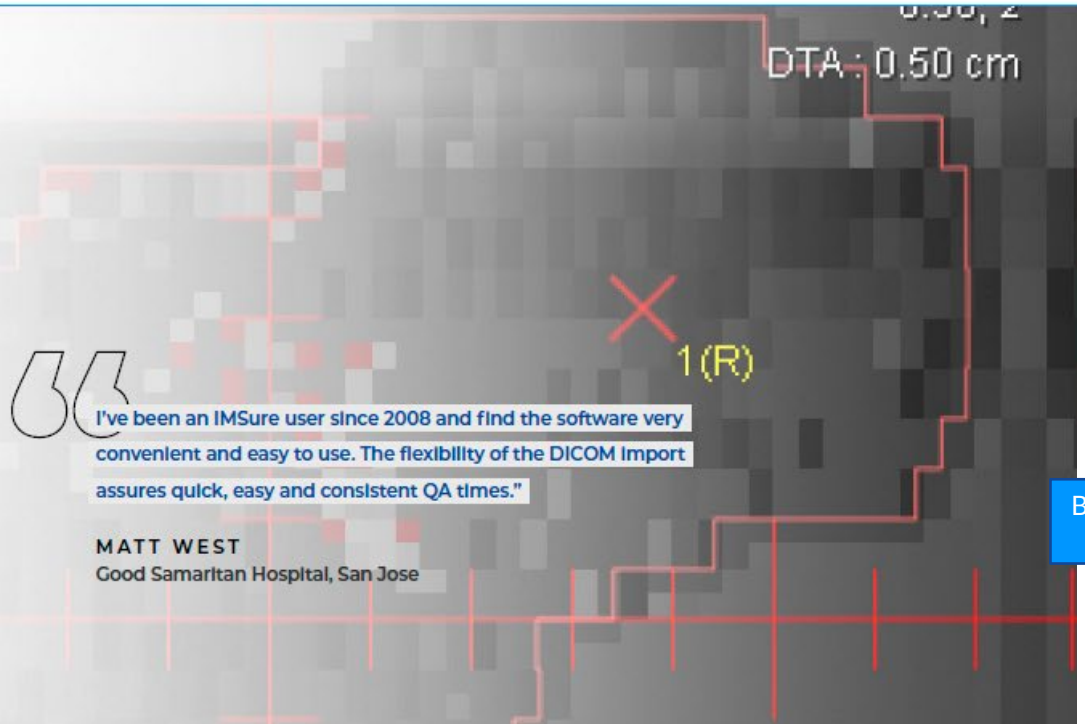
With multiple calculation point support, IMSure allows you to place an unlimited number of 'virtual' chambers anywhere in the field to sample point doses. IMSure will also import the fluence from your treatment planning system and directly compare that to an independently calculated fluence allowing for a more comprehensive verification of the plan.

STRUCTURES

Importing the structure set along with your plan allows for better visualization of your plan data and calculation point positions. Utilize contours to account for missing tissue (flash). Also import CT images for automatic effective depth calculation to account for patient heterogeneity.

INTUITIVE COMPUTING

Automatic SSD and effective depth calculations are performed when CT slices and structures are imported along with a plan. This allows the system to account for heterogeneities within the patient geometry. For VMAT plans, an optional Control Point Report provides segment by segment values for the SSD and effective depth of each calculation point.



"I've been an IMSure user since 2008 and find the software very convenient and easy to use. The flexibility of the DICOM import assures quick, easy and consistent QA times."

MATT WEST
Good Samaritan Hospital, San Jose

IMSURE SOFTWARE/COMPUTER REQUIREMENTS

- **Operating System** — Windows® 10 Professional, 64 bit recommended
- **Processor** — Dual Core, 1 GHz; Quad Core, 2 GHz Recommended
- **Memory** — 32-bit OS: 2 GB, 4 GB Recommended; 64-bit OS: 4 GB, 8 GB Recommended
- **Runtime Environment** — Visual C++ 2010 Runtime
- **Hard Drive** — 32 GB or greater, 3 GB free space for initial software installation.
  - Sufficient free space to store the input RT Plan, Structures, and Image files as required.
  - 25% free space recommended.
- **Screen Resolution** — 1024 x 768 or greater
- **Optical Drive** — Compact Disc (CD) or Digital Versatile Disc (DVD)
- **Connectivity** — IPv4 LAN, 100 Mbit/s or greater

Windows® is a registered trademark of Microsoft Corporation.

IMSure 3D Software

- ✓ Monte Carlo Accuracy
- ✓ Absolute Automation
- ✓ Quick Calculations

Empower Your Pre-Treatment QA

Trusted, Independent Patient Specific QA

Adaptivo

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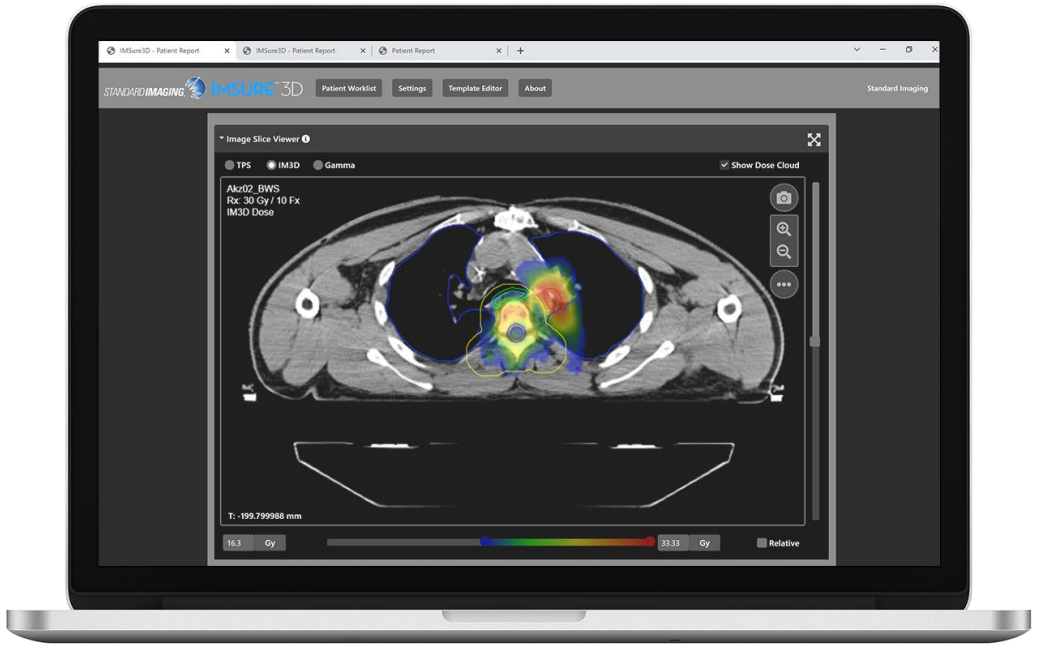
IMSure 3D Software

✓ Time-saving QA Routine

Software easily identifies errors and provides tools for an intuitive, comprehensive analysis. Quickly and easily assess plans from anywhere using the web-based interface.



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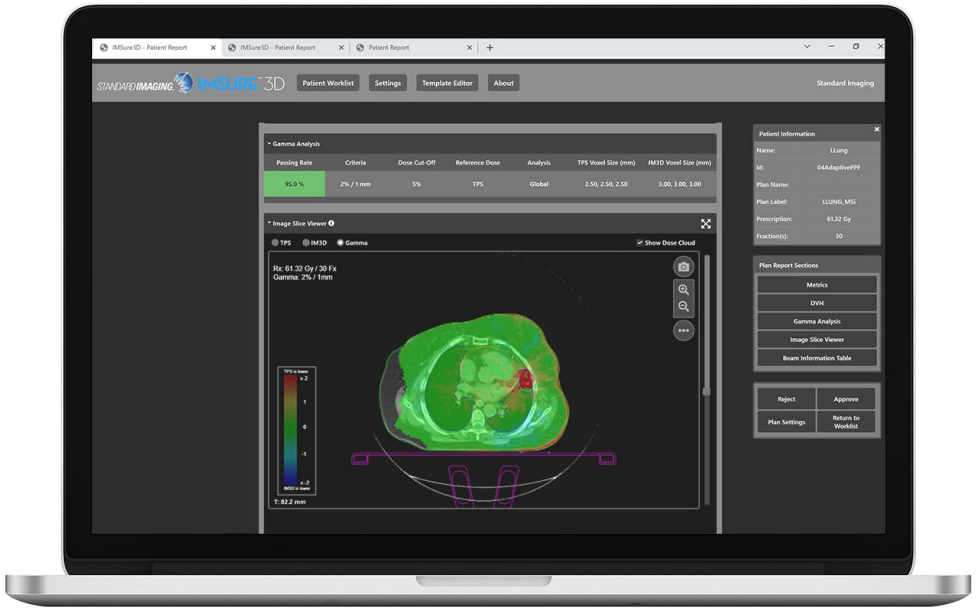
IMSure 3D Software

Maximize Monte Carlo

- Supports all major treatment machines:
- Elekta®
- Varian® (including Halcyon™ and Ethos™)
- Siemens®
- Accuray®
- TomoTherapy®
- Radixact®
- CyberKnife®-systems
- ZAP-X®

Complete recommended machine QA performed daily by Therapists

High resolution imaging without the cost and bother of film



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QA StereoChecker

- ✓ Reduces CyberKnife morning QA time from hours to minutes
- ✓ Complete recommended machine QA performed daily by Therapists
- ✓ High resolution imaging without the cost and bother of film

QABC+

SDVP

SuperMAX

EXRADIN

PIPSpro

DV1

QACC

D

Brochure

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CYBERKNIFE QA

STANDARD IMAGING

QA STEREOCHECKER™

FAST AND FILMLESS CYBERKNIFE® QA

Designed for both physicists and therapists, the QA StereoChecker easily delivers a comprehensive QA review of your CyberKnife within minutes.

READY WHEN YOU ARE

No film, no bulky collimator attachments, and no manipulation of the robot required.

TEST LIKE YOU TREAT

Align using the embedded fiducials in the QA StereoChecker. Treat just as you would a patient.

DID YOU KNOW? The cost of film necessary for Accuray-recommended daily CyberKnife machine QA tests can be $5,000 USD annually.

QASC

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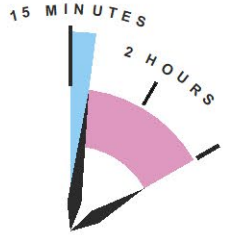
SPEED AND ACCURACY: NOW YOU CAN HAVE BOTH



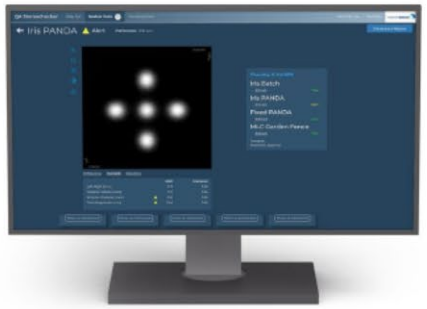
The QA StereoChecker uses the same type of high resolution detectors as on-board imaging systems of traditional linacs (such as EPIDs) to give you highly-accurate, repeatable results in record time. You can cut your daily CyberKnife QA time from two hours down to just 15 minutes.

IRIS QA

The QASC delivers quantitative results regarding the field size, flatness, and penumbra for all clinical iris diameters. An automated analysis software routine allows for consecutive analysis of all Iris diameters in a matter of seconds. Results can be exported as a report, and images and data can be exported for further analysis. This monthly test can now be performed on a daily basis, providing feedback on the status of each field size, allowing for trends to be observed and reducing machine downtime.

MLC QA

Efficiently (and again without film) perform a garden fence or picket fence test. The QASC software can detect leaf errors to within 0.2 mm, prevent machine downtime and improving throughput. Seamlessly integrate this device with the latest offerings of the MLC dose delivery techniques.



POSITION AND DELIVERY ANALYSIS (PANDA)

Eliminate film from your daily QA routine! The automated TLS/TDS analysis algorithm (PANDA) verifies the performance of positioning and delivery. The QASC can detect and report on translational errors in three dimensions to within 0.1 mm. In less than ten minutes, perform an analog to the manufacturer-recommended automated quality assurance test, and save your results as a report or export data and images.

QASC

HOME

Brochure 2 of 3

CYBERKNIFE QA

STANDARD IMAGING

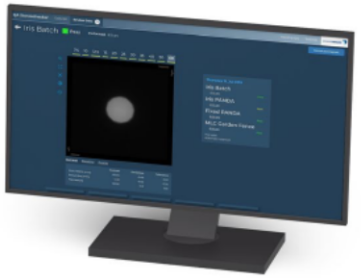
STREAMLINED OPERATION

CYBERKNIFE QA CAN NOW BE PERFORMED DAILY BY THERAPISTS

IRIS™ QA

COMPLETE IN 5 MINUTES

- Scan quality data every morning
- Measures profiles, field width, penumbra, flatness
- Capable of detecting a 0.1 mm field size variation



PANDA

COMPLETE IN 5 MINUTES

- Replaces film-based AQA with a faster and easier method, producing equivalent or better results
- Measures translational and rotational offsets in three dimensions
- Capable of detecting a 0.1 mm translational offset

MLC QA

COMPLETE IN 5 MINUTES

- Replaces daily non-quantitative film-based Picket Fence Tests and monthly Garden Fence Tests
- Measures planned vs. acquired leaf patterns
- Capable of detecting leaf variation of 0.2 mm

> **We have been very happy with our purchase of the QA StereoChecker. Since acquiring the QASC, CyberKnife daily and monthly MLC and Iris QA at our clinic has been a breeze. The ease of use, coupled with the high resolution, makes me and my therapist's life so much easier. We currently do a lot of patient specific SRS/SBRT QA with film, and having to be largely filmless with machine QA is a big deal. Definitely a worthwhile investment, especially considering the future potential of this device."**

SIDNEY N TAZEH M.SC., DABR
CyberKnife Medical Physicist
James A. Haley VA Medical Center

QA STEREOCHECKER SPECIFICATIONS

Dimensions — [length × width × height] 38.7 cm x 32.7 cm x 4.9 cm // **Photons** — ^{60}Co to 15 MV

Software/Computer Requirements

Operating System — Windows® 10 Professional, 64 bit — English version is required in all cases
Processor — Dual Core - 2 GHz; Quad Core – 2GHz recommended
Memory — 8 GB RAM (16 GB RAM is recommended)
Hard Drive — 32 GB or greater, 2 GB free space for initial software installation. 25% free space recommended
Screen Resolution — 1024 x 768 pixel or greater, 24-bit TrueColor or greater; 4k monitors not supported
Optical Drive — Compact Disc (CD) or Digital Versatile Disc (DVD)
Connectivity — IPv4 1 Gbit/s (for imaging panel) and IPv4 LAN, 100 Mbit/s or greater
Ports — RJ45 Gbit Ethernet connection
Network — Full administrative rights are required
Required Ancillary Programs — Microsoft Excel
Product Standards — CE 0123

Specifications subject to change without notice.

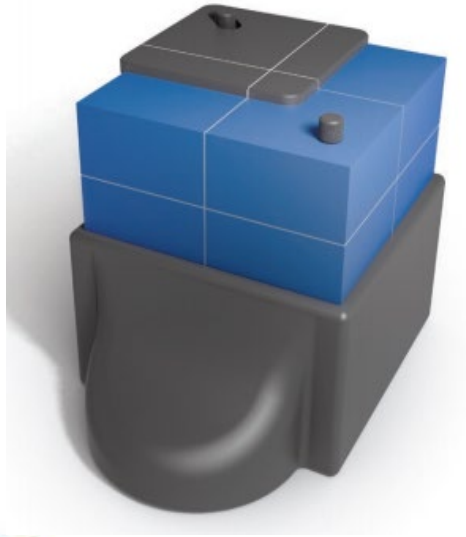
PATENT PENDING

QASC

HOME

Stereotactic Dose Verification Phantom

- ✓ Recommended by Accuray for fast and accurate commissioning of the CyberKnife system
- ✓ Customizable configurations to meet the needs of your clinic
- ✓ Convenient design, built with precision
- ✓ Interior and exterior alignment features make positioning easy



QASC

QABC+

SuperMAX

EXRADIN

PIPSpro

DV1D

QACC

Brochure

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STANDARD IMAGING

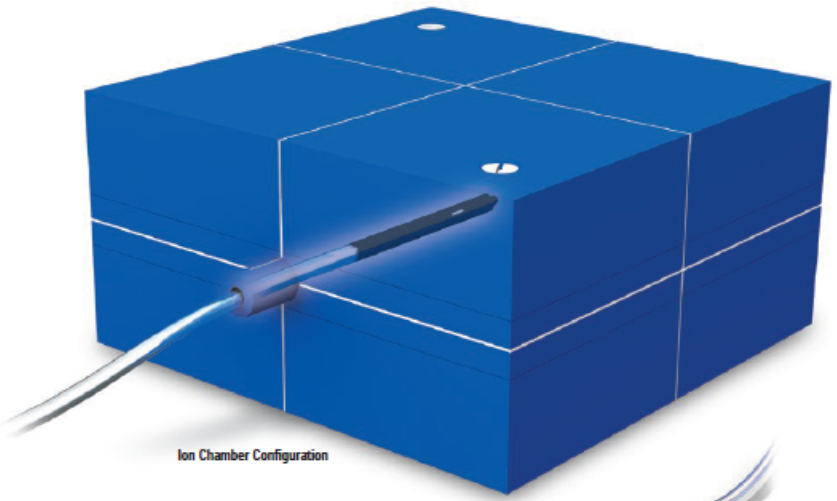
STEREOTACTIC DOSE VERIFICATION PHANTOM

VERSATILE STEREOTACTIC QA

For fast and accurate commissioning of Accuray CyberKnife® treatment systems and patient specific dose verification plans.

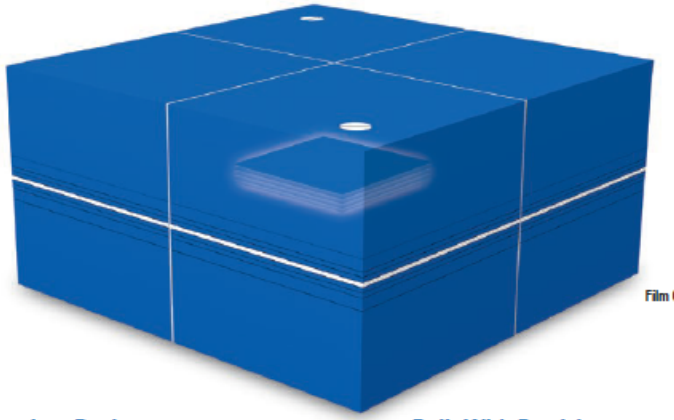
STEREOTACTIC RADIOSURGERY QA

The Stereotactic Dose Verification Phantom provides dose measurements for commissioning treatment systems, such as Accuray CyberKnife®, and specific plan dose verification. With just one phantom, use film, ion chambers and the unique SRS Dosimetric QA Slab to perform fast and accurate system evaluation.



Ion Chamber Configuration

Included ion chamber plugs
Model A16 Exradin Microchamber
Model A19 Exradin Classic Farmer-type Chamber



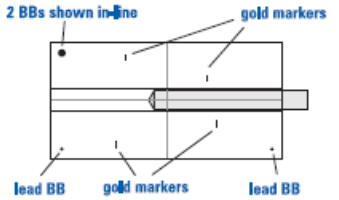
Film Configuration

Convenient Design

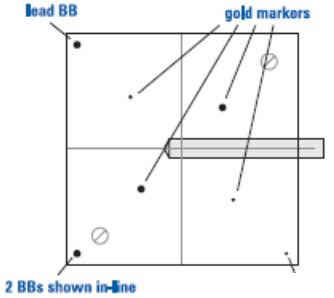
The standard phantom is 20 x 20 x 10 cm in size, comprised of two 4 cm top and bottom build-up slabs, and two interchangeable 2 cm test inserts in the center. Optional inserts include the SRS Dosimetric QA Slab and SDVP Heterogeneity insert. Rigid alignment posts ensure phantom configurations are precisely repositioned, and thumb or flat-head screws secure the phantom together for repeatable results. The Stereotactic Dose Verification Phantom is constructed of Blue Water material and additional slabs are available in many thicknesses for increased build-up.

Built With Precision

Laser alignment lines are provided to accurately position the phantom for CT scans and for treatment. Gold and lead fiducial markers are located throughout the phantom for additional orientation and positioning accuracy. Distance measurements within the CT scanning and TPS can be verified with confidence.



Side View



Top View

(larger marks indicate marker located in top slab)

SDVP

HOME

Brochure 1 of 4

SDVP

HOME

Brochure 2 of 4

CUSTOMIZABLE CONFIGURATIONS

Validate dose conformity, Monte Carlo algorithms and small field measurements with the Stereotactic Dose Verification Phantom inserts.

SDVP with SRS Dosimetric QA Insert

SDVP with SDVP Heterogeneity Insert

SRS Dosimetric QA Insert [OPTIONAL]

For rigorous testing and evaluation of imaging, treatment planning, and dose conformity.

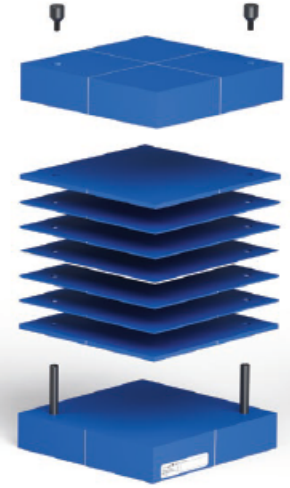
The SRS Dosimetric QA Insert provides complex geometric targets to evaluate the imaging avoidance and inclusion components of the treatment planning system. The volume of the test objects are known and can be used to evaluate the volumetric accuracy of the treatment planning system. Five CT densities are available for a QA check of the CT density model.

SDVP Heterogeneity Insert [OPTIONAL]

Verify your treatment planning system's Monte Carlo dose calculation within 0.5%.

The SDVP Heterogeneity Insert allows for validation of Monte Carlo algorithms for small fields in both homogenous and heterogeneous phantom materials. The insert has two 5 cm slabs and a 2 cm chamber slab made of lung equivalent material inserted between the Stereotactic Dose Verification Phantom Blue Water slabs to test these different environments. The Blue Water cavity plug with embedded gold fiducial markers simulates a small target, allowing for testing to be completed on your Cyberknife System at the 4 mm field size.

Use the Exradin W1 Scintillator or other small field detector to provide accurate results in this difficult testing environment.



SDVP with Film Dosimetry Insert

SDVP with Ion Chamber Insert

Film Dosimetry Insert [INCLUDED]

Five water equivalent Blue Water slabs allow film to be positioned 2 mm apart for dose profile measurements of very small SRS targets. A cavity in each slab positions a 2.5 x 2.5 inch film in the exact center.

Ion Chamber Insert [INCLUDED]

The 2 cm Blue Water Ion Chamber Insert has a cavity drilled to accommodate inter-changeable ion chamber plugs, allowing one slab to accommodate several plugs drilled for different ion chambers. The ion chamber plug positions the detector in the exact center of the phantom to facilitate repositioning and fast, accurate measurements. Two drilled ion chamber plugs and one solid plug are included with each phantom.

CYBERKNIFE QA

STANDARD IMAGING

Blue Water Construction

Build-up Slabs

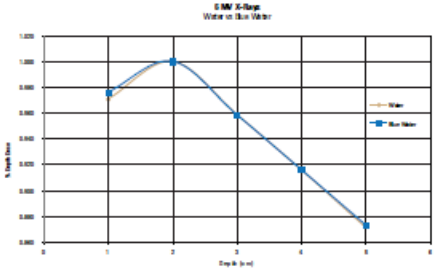
- Two 4.0 cm thick Blue Water slabs positioned above and below the film, chamber or SRS QA Dosimetric Slab provide adequate build-up
- White fiducial lines are located on the X, Y, Z coordinates of the phantom

Tested for Consistency

- Each production run of Blue Water is tested at an independent calibration laboratory for consistency

Wide Range

- Blue Water is also available in nine standard thicknesses for additional build-up
- Custom phantom sizes and shapes are available upon request



6 MV X-Rays
Water vs Blue Water

STEREOTACTIC DOSE VERIFICATION PHANTOM SPECIFICATIONS

MATERIAL		MATERIAL DENSITY	NOMINAL CT DENSITY #	RELATIVE ELECTRON DENSITY TO WATER
Blue Water	1.09 g/cm³	70	1.055	
Black delrin alignment posts and thumbscrews			1.43 g/cm³	355 N/A
Nylon 6/6 flathead screws		1.14 g/cm³	100	N/A
Black C552 target shapes		1.76 g/cm³	600	1.593
Cortical bone plug		1.91 g/cm³	1500	1.782
Trabecular bone plug		1.20 g/cm³	300	1.157
Adipose plug	0.94 g/cm³	-60	0.929	
Lung	0.28 g/cm³	-700	0.259	

DIMENSIONS (Assembled phantom) Height: 10.00 cm, 3.94 in Width: 20.00 cm, 7.87 in
Length: 20.00 cm, 7.87 in Weight: 4.4 kg, 9.7 lbs

DIMENSIONS (SRS Dosimetric QA Insert) Height: 2.00 cm, 0.79 in Width: 20.00 cm, 7.87 in
Length: 20.00 cm, 7.87 in Weight: 0.9 kg, 2.0 lbs

DIMENSIONS (SDVP Heterogeneity Insert) Height: 12.00 cm, 4.72 in Width: 20.00 cm, 7.87 in
Length: 20.00 cm, 7.87 in Weight: 1.3 kg, 2.9 lbs

INCLUDED COMPONENTS

(1) Bottom slab with imbedded gold markers, lead BBs, and integral alignment posts
(1) Top slab with imbedded gold markers and lead BBs
(1) 2.0 cm chamber slab with generic cavity hole
(2) Ion chamber plugs (drilled for Model A19 Exradin Classic Farmer-type Chamber and Model A16 Exradin Micro Chamber)
(1) Solid ion chamber plug
(2) 5.0 mm slabs
(5) 2.0 mm slabs with recessed pockets to accept 2.500" x 2.500" film
(2) Flathead nylon 6/6 screws
(2) Black delrin thumbscrews
(1) Flathead screwdriver

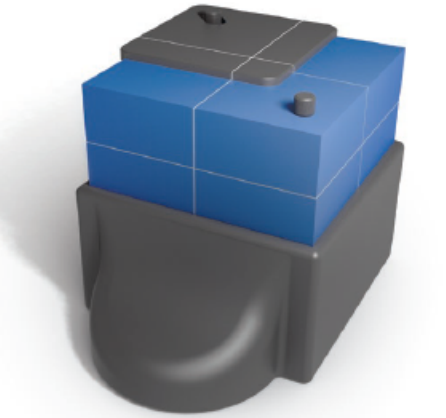
Related Products

Stereotactic Top Hat and Cradle

Perform patient-specific QA for Accuray's CyberKnife™ Radiosurgery System with ease.

The Stereotactic Top Hat makes fiducial Skull Tracking™ with the SDVP possible. Containing fiducials that appear on DRRs, the Stereotactic Top Hat allows for logical alignment and use of the pre-treatment imaging system.

For additional convenience, use the Stereotactic Cradle to elevate the SDVP phantom above the treatment couch to avoid triggering collision errors.



PIPSpro Software

PIPSpro is your CyberKnife image analysis software.

PIPSpro includes CyberKnife capabilities, allowing you to configure complete TG-142 reports for your CyberKnife machine. Bring your dose verification full circle with PIPSpro's powerful software.

- Filmless, quantifiable TG-142 QA
- Easy analysis, trending and reporting
- Validated performance

QCkV-1 Phantom

QCkV-1 is the perfect phantom for image quality reporting with CyberKnife. The QCkV-1 is equipped with tighter line pairs to account for high resolution of kV imagers. When PIPSpro 5.1 software is paired with the QCkV-1 Phantom, you have unparalleled ease of CyberKnife image analysis and trending.

The QCkV-1 Positioning Stand can be used to position the phantom at a 45 angle compatible with Accuray imagers.

SDVP

HOME

Brochure
3 of 4

Exradin Ion Chambers

- ✓ Waterproof construction backed by a 5 year warranty
- ✓ Homogeneous materials throughout minimize measurement perturbations
- ✓ Available in MR-Compatible versions
- ✓ A standard in dosimetry measurements for over 40 years

QASC

QABC+

SDVP

SuperMAX

PIPSpro

DV1D

QACC

Brochure

Home

EXRADIN DETECTORS

STANDARD IMAGING

UNCOMPROMISING QUALITY

The standard in dosimetry measurements for over 40 years.

A Global Reputation for Excellence

For over 40 years top research institutes and standards laboratories world-wide have used Exradin Detectors for a broad range of dosimetry measurements in diverse radiation environments.

The Exradin line continues to build upon vetted ion chambers like the Exradin A12 and Exradin A5 with advanced microionization chambers. Our passion for metrology, expertise in engineering and dedication to durability ensures that each detector we produce embodies this tradition of quality workmanship and exacting precision.

EXRADIN

HOME

Brochure 1 of 7

The Exradin Advantage

Better Components

- Waterproof construction eliminates the need for sleeves or protective coatings.
- Robust materials are more durable than typical chambers (i.e. PMMA thimble tips), and therefore are more suitable for routine measurements.
- Excellent inherent conductivity negates the need for coatings found in other chambers, which can flake off and require careful handling.
- Collector, guard and shell are made of conductive material developed by Dr. Francis Shonka, the creator of A150 tissue-equivalent, C552 air-equivalent and D400 polystyrene-equivalent plastics.

Unmatched Durability

- An Exradin A12 farmer-type chamber survived three 1 meter drop tests onto a hard floor, in three different orientations, without a change in calibration.*

Superior Stability

- Advanced guard design creates a consistent collecting volume with uniform electric field lines, providing a stable, repeatable signal.
- Exradin detectors feature some of the quickest settling times of any manufacturer.
- Exceptionally wide guard rings on all parallel plate chambers eliminate perturbation volume effects.

Ideal Design for Improved Accuracy

- The collecting volumes of Exradin ion chambers are defined by the guard, not an insulator, creating a significantly more stable signal than competing detectors.
- Axially symmetric design ensures a uniform isotropic response.
- Collection efficiencies of 99.9% or greater.
- Chamber vents through a flexible tube surrounding the triaxial cable; ideal for use in water or plastic phantoms.

Superior Stability upon Connection

- Ionization currents can be read immediately after electrometer and extension cable transients subside because Exradin ion chambers stabilize immediately after applying a bias voltage and have minimal to no polarity effects.
- Leakage currents for Exradin chambers are nearly negligible; +/- 10x10-15 A

* *"Evaluation of a Water-proof, Homogeneous Farmer-Type Ion Ch... ...oltage and High Energy X-Rays and Electron Beams". V.M. Tello, A. Lawyer, C. Chu, J.A. BenComo and W.F. Hanson, presented at AAPM July 1996*

EXRADIN DETECTORS

STANDARD IMAGING

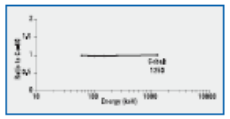
THIMBLE ION CHAMBERS

Strict manufacturing tolerances and waterproof construction make Exradin Thimble Ion Chambers ideal for dosimetry calibrations in water, air and other phantom materials.

EXRADIN A19 ION CHAMBER 0.62 cc

The A19 fits existing plastic phantom cavities and build-up caps, limiting perturbation and minimizing settling time in clinical dosimetry measurements. This chamber is characterized for TG-51 procedures.

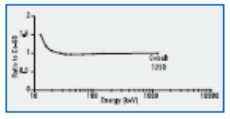
MR COMPATIBLE VERSION AVAILABLE



EXRADIN A12 ION CHAMBER 0.64 cc

Characterized in TG-51 and TRS-398, the A12 has fast settling time and a removable stem for superior absolute dosimetry measurements in water, air or phantoms.

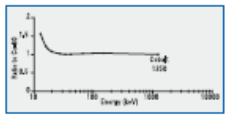
MR COMPATIBLE VERSION AVAILABLE



EXRADIN A12S ION CHAMBER 0.24 cc

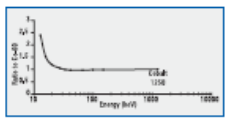
The A12S is designed for absolute dosimetry calibrations in water, air or phantoms. The collector of the A12S is approximately one-third the size of the A12, allowing for finer resolution measurements.

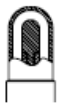
MR COMPATIBLE VERSION AVAILABLE



EXRADIN A2 ION CHAMBER 0.53 cc Spokas – *P2, T2 also available*

The A2 is ideal for precise measurement of exposure and air kerma in photon beams and absorbed dose in photon, electron, proton and other beams. This chamber is available in air, polystyrene and tissue equivalent plastic. It is also available in magnesium with gas flow capabilities.

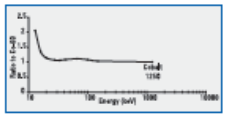




EXRADIN A1SL ION CHAMBER 0.053 cc Slimline Miniature Shonka

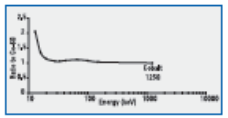
The A1SL, available in air or tissue equivalent plastic, provides a perfect balance between fast scanning and point-dose measurements within 1 cm in water, air or phantom materials. This chamber is characterized for TG-51 procedures.

MR COMPATIBLE VERSION AVAILABLE



EXRADIN A1 ION CHAMBER 0.053 cc Miniature Shonka – *T1 also available*

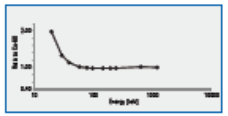
The Exradin A1 has the same internal dimensions and collecting volume as the A1SL, yet the larger diameter is ideal for use in solid phantoms. This chamber is characterized in TG-51 and TRS-398.



EXRADIN A28 ION CHAMBER 0.125 cc Scanning

The Exradin A28 features exceptional omni-directional spatial resolution for relative dosimetry scanning in water phantoms and use in small field measurements.

MR COMPATIBLE VERSION AVAILABLE



EXRADIN

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EXRADIN DETECTORS

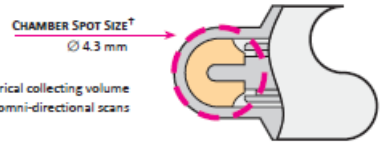
STANDARD IMAGING

MICRO ION CHAMBERS

Superior small-field dosimetry to assess pinpoint radiation fields in IMRT, stereotactic, orthovoltage, and superficial skin treatments.

EXRADIN A26 ION CHAMBER 0.015 cc Micropoint

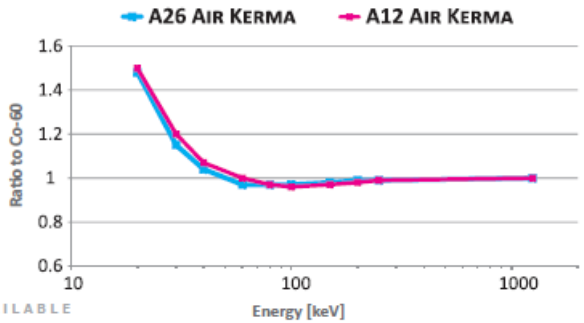
Uniform 4.3 mm diameter spot size reduces volume averaging effects and eliminates angular dependencies of volume averaging.



Experience the same measurement quality in a microchamber you have come to expect from your reference-class chamber.

- Rapid settling
- Stable, reproducible measurements
- Realistic and meaningful ion recombination corrections
- Minimal polarity dependence
- Minimal energy dependence
- The only microchamber that was designed to meet reference class criteria from IEC 60731 and TG-51

ENERGY RESPONSE



MR COMPATIBLE VERSION AVAILABLE

Example Reference Class Criteria*	Reference Class Performance	Exradin A26
P_{leak}: Leakage	< 0.1%	✓
P_{pol}: Polarity	< 0.4% correction	✓
P_{pol}: Polarity	< 0.5% max variation	✓
P_{ion}: ion recombination	Linear with dose per pulse	✓
Initial recombination	Within 0.3% of unity	✓
Polarity dependence of P_{ion}:	< 0.1% between positive and negative bias	✓
Chamber stability	within 0.3% change over 2 years	Chamber is not yet 2 years old

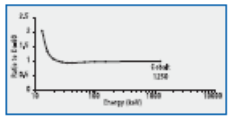
per TG 51

EXRADIN A16 ION CHAMBER 0.007 cc Micropoint

The Model A16 microchamber can measure small field sizes (3.4 mm x 3.4 mm); allowing for exceptional spatial resolution and exact pinpoint beam profile characterization. These attributes make the A16 ideal for stereotactic radiosurgery and IMRT applications.

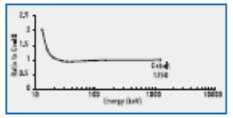
EXRADIN A14SL ION CHAMBERS 0.015 cc Slimline Microchamber

The Model A14SL is capable of measuring extremely small field sizes of 4 mm by 6 mm, allowing for exceptional spatial resolution and exact pinpoint beam profile characterization. This helps assess radiation fields during IMRT and stereotactic radiosurgery.



EXRADIN A14 ION CHAMBERS 0.015 cc Microchamber – *T14, also available*

The Model A14 microchamber has the exact internal dimensions and collecting volume as the Model A14SL, yet a larger diameter is ideal for use in solid phantoms.



EXRADIN

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EXRADIN DETECTORS

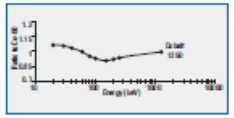
STANDARD IMAGING

Parallel Plate Chambers

Exceptionally wide guard rings ensure precision in depth-dose measurement with no perturbation in field lines.

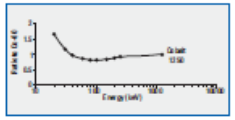
EXRADIN A10 ION CHAMBER 0.050 cc Parallel Plate

The A10 chamber provides excellent spatial resolution for dose distribution measurements in a water phantom. An acrylic waterproof cap is included with this chamber for use in TG-51 electron beam protocols.



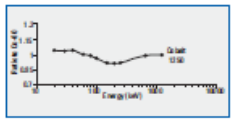
EXRADIN A11 ION CHAMBER 0.62 cc Parallel Plate – *T11, P11 also available*

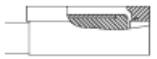
Waterproof A11 chamber may be operated while fully submerged without any protective sheath; ideal for repeated TG-51/TRS-398 dose distribution measurements in a water phantom.



EXRADIN A11TW ION CHAMBER 0.93 cc Thin Window Parallel Plate – *T11TW, P11TW also available*

The A11TW is tailored for use in superficial therapy and low energy diagnostic beams. The thin-window design provides nearly constant response over the entire diagnostic energy range.



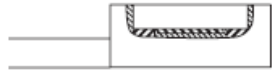


EXRADIN MAGNA A600 ION CHAMBER 1.50 cc Diagnostic Parallel Plate

The A600 chamber is designed for consistent air kerma, absorbed dose and exposure measurements. Vented and fully-guarded, this chamber is perfectly suited for mammography and general diagnostic x-ray regions.

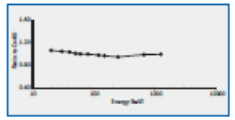
EXRADIN MAGNA A650 ION CHAMBER 3.46 cc Diagnostic Parallel Plate

The A650 chamber is a vented and fully guarded ion chamber for use in mammography and general diagnostic energy x-ray regions.



EXRADIN A20 ION CHAMBER 0.074 cc Low Energy X-Ray

The A20 is a low-energy x-ray chamber for assessing and calibrating pinpoint radiation fields for x-rays, stereotactic and TG-61 compliant superficial skin therapy.



EXRADIN DETECTORS

STANDARD IMAGING

CT Ion Chambers

Exradin CT Chambers are durable detectors for performing the measurements necessary in the Computed Tomography Dose Index (CTDI) calculations described in TG-74.

EXRADIN A101 ION CHAMBER 4.54 cc

The A101 performs the measurements necessary for calculating the CTDI as described in TG-74. It has excellent response uniformity over the chamber length, with variation less than ±3%.

EXRADIN A17 ION CHAMBER 1.91 cc Slice Therapy

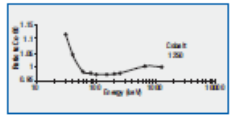
The A17 is tailored for tomotherapy applications such as weekly QA checks or patient dose verification with phantoms and water tanks. It has excellent response uniformity over the chamber length, with variation less than ±1.5%.

Spherical Ion Chambers

Exradin Spherical Ion Chambers are relied upon by standards laboratories worldwide for precise measurement of radiation exposure and exposure rates. They are easily positioned and are excellent for in-air measurements.

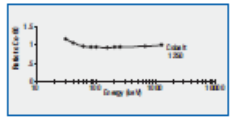
EXRADIN A3 ION CHAMBER 3.6 cc Shonka-Wyckoff Spherical

3.6cc collecting volume is ideal for laboratory transfer standards and secondary standards for exposure measurements.



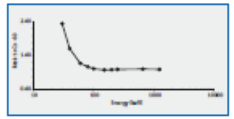
EXRADIN A4 ION CHAMBER 30 cc Shonka-Wyckoff Spherical

30cc collecting volume is ideal for laboratory transfer standards, secondary standards for exposure measurement and integrating exposure over a large area.



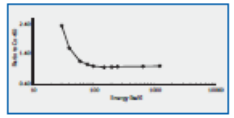
EXRADIN A5 ION CHAMBER 100 cc Shonka-Wyckoff Spherical

100cc collecting volume is ideal for secondary standards for exposure measurement, integrating exposure over a large area and room scatter measurements.



EXRADIN A6 ION CHAMBER 800 cc Shonka-Wyckoff Spherical

The 800 cc collecting volume of the Exradin A6 is ideal for exposure measurements, providing secondary standard quality measurements, integrating exposure over a large area such as room scatter measurements.



EXRADIN A8 ION CHAMBER 15.7 liter Shonka-Wyckoff Spherical

The 15.7 L collecting volume of the Exradin A8 is ideal for extremely low exposure rate measurements, providing secondary standard quality measurements, integrating exposure over a large area such as room scatter measurements.

EXRADIN

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EXRADIN DETECTORS

STANDARD IMAGING

EXRADIN W1 SCINTILLATOR

The Exradin W1 Scintillator is a near-water equivalent detector that achieves paramount precision by significantly decreasing beam disturbance.

Minimize Beam Perturbation and Corrections

The unprecedented characteristics of the W1 Scintillator closely mimic water, easing data collection by negating many measurement corrections required with other detectors.

- Near water equivalence (within 5% of physical density)
- Linear dose response
- Dose rate independence
- Energy independence within the MV range
- Minimal temperature dependence

Ideal for Measurement and Characterization of Small Fields

1mm spatial resolution makes the W1 a perfect tool for stereotactic radiosurgery (SRS) and stereotactic body radiation therapy (SBRT) QA. This includes compatibility with the Lucy 3D QA Phantom and use in the following systems:

- Gamma Knife®
- CyberKnife®
- BrainLab®

SuperMAX Electrometer

Automatically Correct for Cherenkov Effect

Pair the W1 Scintillator with the SuperMAX Electrometer to effectively eliminate Cherenkov effect without the need for extraneous hand calculations.

Consistent, Convenient Setup

Integration with the Exradin Scintillator Calibration Slab and solid water phantoms allows for easy, repeatable measurements.

EXRADIN D1H & D1V DIODES

The Exradin D1V and D1H Diodes maximize spatial resolution and minimize angular dependence, allowing for consistent, accurate small-field stereotactic measurements.

Why use an Exradin Diode?

Exradin diodes produce flatter profiles and sharper resolution with a smaller active measurement area than traditional ion chambers. This allows for the precise measurement of minute fields while still achieving high visibility of the beam's penumbra.

Specialized for Small Fields

The Exradin D1V and D1H Diodes facilitate several measurement modalities in small fields.

- The diode face of the D1V is perpendicular to the beam when upright, making it ideal for photon scanning applications and use in water phantoms.
- The diode face of the D1H is perpendicular to the beam when flat, for use inside traditional plastic phantoms.

Both the D1V and D1H provide superior measurement of field sizes up to 20 x 20 cm² with excellent spatial resolution and minimal noise.

Minimize Angular Dependence

A common problem when performing measurements using diode-based detectors is angular dependence or significant variation in signal depending on the orientation of the detector. Exradin diodes help minimize this concern with less than 0.5% angular dependence when tilted up to 20° to the beam, providing more confidence in your results when measuring the penumbra or edge of the beam.

EXRADIN DETECTORS

STANDARD IMAGING

	THIMBLE ION CHAMBERS								MICRO ION CHAMBERS			
MODEL	**1**	**A1SL**	**2**	**A18**	**A28**	**A19**	**A12**	**A12S**	**14**	**A14SL**	**A16**	**A26**
Collecting Volume (cc)	0.053	0.053	0.53	0.123	0.125	0.62	0.64	0.24	0.015	0.015	0.007	0.015
Spot Size (mm)	8.0	8.0	14.0	10.8	8.0	26.2	26.5	13.1	6.4	6.4	3.5	4.3
Centroid of Collecting Volume from exterior tip of shell (mm)	3.86	4.06	6.96	5.26	4.47	13.0	12.9	5.79	2.21	2.39	1.65	1.98
Centroid of Collecting Volume from exterior surface of window (mm)												
Outside Diameter of Shell (mm)	6.0	6.35	11.4	6.9	8	7.1	7.1	7.1	6.0	6.35	3.4	4.3
Inside Diameter of Shell (mm) Collecting Volume Outer Diameter	4.0	4.0	9.5	4.9	5.8	6.1	6.1	6.1	4.0	4.0	2.4	3.3
Window Collector Gap (mm)												
Shell Wall Thickness (mm)	1.0	1.1	1.0	1.0	1.1	0.5	0.5	0.5	1.0	1.1	0.5	0.5
Collector Diameter (mm)	1.0	1.0	4.6	1.0	1.0	1.0	1.0	1.0	0.3	0.3	0.3	0.75
Guard Ring Width (Radial) (mm)												
Collector Length (mm)	4.4	4.4	8.4	6.4	6.4	21.6	21.6	7.5	1.5	1.5	1.27	1.78
Window Material*												
Window Thickness												
MR Compatibility Available		MR			MR	MR	MR	MR				MR
Shell/Entry Window, Collector and Guard Material*	A, T	A	A, T	A	A	A	A	A	SHELL ONLY A	SHELL ONLY A	SHELL ONLY A	A
Nominal Air Kerma Calibration Factor†	5.4E+8 Gy/C	5.4E+8 Gy/C	5.4E+7 Gy/C	2.3E+8 Gy/C	2.3E+8 Gy/C	4.5E+7 Gy/C	4.4E+7 Gy/C	1.2E+8 Gy/C	1.9E+9 Gy/C	1.9E+9 Gy/C	4.1E+9 Gy/C	1.85E+9 Gy/C
Recommended Polarizing Voltage (V)	300	300	300	300	300	300	300	300	300	300	300	300
Nominal Leakage (amp)	± 10 x 10^{-15}											
Maximum Polarizing Voltage (V)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Waterproof	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Included Buildup Cap	None	None	None	Co-60	Co-60	Co-60	Co-60	Co-60	None	None	Co-60	Co-60

	CT ION CHAMBERS		PARALLEL PLATE ION CHAMBERS						SPHERICAL ION CHAMBERS				
MODEL	**A101**	**A17**	**A10**	**11**	**11TW**	**A20**	**Magna A600**	**Magna A650**	**A3**	**A4**	**A5**	**A6**	**A8**
Collecting Volume (cc)	4.54	1.91	0.050	0.62	0.93	0.074	1.50	3.46	3.6	30	100	800	15.7 L
Spot Size (mm)													
Centroid of Collecting Volume from exterior tip of shell (mm)													
Centroid of Collecting Volume from exterior surface of window (mm)			1.0	2.0	1.5	1.8	4.0	4.0					
Outside Diameter of Shell (mm)	10.0	12.7							19.6	39.1	63.1	120.4	323.2
Inside Diameter of Shell (mm) Collecting Volume Outer Diameter	8.0	6.0							19.1	38.1	57.2	114.4	311.2
Window Collector Gap (mm)			2.0	2.0	3.0	5.0	7.95	7.95					
Shell Wall Thickness (mm)	1.0	3.3							0.25	0.5	3.0	3.0	6.0
Collector Diameter (mm)	2.5	2.5	5.4	20.0	20.0	1.93	12.7	21.9	2.1	4.1	6.5	11.6	22.4
Guard Ring Width (Radial) (mm)			4.3	4.4	4.4	1.2	3.9	7.6					
Collector Length (mm)	100	80							13.3	24.9	37.3	74.0	166.7
Window Material*			K	1.0 mm, A, P, or T	K	2K	K	K					
Window Thickness			0.05 mm	1.0 mm	0.05 mm	0.09 mm	0.05 mm	0.05 mm					
MR Compatibility Available													
Shell/Entry Window, Collector and Guard Material*	A	A	A	A, P, T	A, P, T	A	A	A	A	A	A	A	A
Nominal Air Kerma Calibration Factor†	6.2E+6 Gy/C	1.5E+7 Gy/C	5.6E+8 Gy/C	4.6E+7 Gy/C	3.0E+7 Gy/C	3.8E+8 Gy/C	1.9E+7 Gy/C	8.2E+6 Gy/C	9.0E+8 R/C	1.1E+8 R/C	3.3E+7 R/C	4.2E+6 R/C	2.1E+5 R/C
Recommended Polarizing Voltage (V)	300	300	300	300	300	300	300	300	300	500	800	1000	1000
Nominal Leakage (amp)	± 10 x 10^{-15}												
Maximum Polarizing Voltage (V)	1000	1000	1000	1000	1000	1000	400	400	1000	1000	1000	1000	1000
Waterproof	No	Yes	Yes (2)	Yes	Yes (2)	No	No	No	No	No	No	No	No
Included Buildup Cap	None (1)	Co-60 integral	None	None	None	None	None	None	None	None	Co-60 integral	Co-60 integral	Co-60 integral

** **MATERIAL:** **A** – C552 Shonka air-equivalent plastic **P** – D400 polystyrene-equivalent plastic **T** – A150 Shonka tissue-equivalent plastic **K** – 3.86 mg/cm² Kapton **2K** – 7.72 mg/cm² Kapton*

† Nominal calibration factor for Co-60 at 22° C

(1) comes included with an acrylic sleeve to adapt chamber to fit Ø0.50 in (12.7 mm) phantom holes

(2) included waterproofing cap is PMMA, 1.0mm entry window, TG-51 compliant

EXRADIN

HOME

Brochure 7 of 7

DoseView 1D

- ✓ Easy 3 point leveling
- ✓ Automatic, Customizable Data collection with included DV1D software
- ✓ 0.05 mm accuracy for consistent QA

QASC

QABC+

SDVP

SuperMAX

EXRADIN

PIPSpro

QACC

Brochure

HOME

STANDARD IMAGING

DOSEVIEW™ 1D

AUTOMATE ABSORBED DOSE TO WATER MEASUREMENTS

Automatically acquire depth-dose measurements in a durable, TG-51 and TRS-398 compliant 1D water scanning system.

Design Ensures 0.05 mm Accuracy and Repeatable Scans

- 0.05 mm precision over the entire arm travel distance.
- Engraved vertical lines expedite phantom alignment with room lasers.
- Two fill lines accommodate 20 cm and 25 cm depth measurements.

Easily Adapts to Fit Range of Detectors

- The water equivalent ion chamber bracket fits most thimble ion chambers and rigid stem parallel plate chambers.
- Alignment lines help quickly place the centriod of a detector at isocenter.
- Optional brackets available for vertically-oriented and stemless detectors.

Remote Operation with Handheld Controller

- Establish origin position and automatically return to origin with the press of a button.
- Three movement modes; fast, slow and step (0.01 mm to 100 mm).
- Easily toggle between cm/mm.
- Controller recalls the saved position for operation outside the vault.

AUTOMATIC 1D SCANNING ROUTINES WITH DOSEVIEW 1D SOFTWARE

Fully Automate Depth Dose Data Collection With Doseview 1D and the Supermax or Max 4000 Electrometers

- Customize step sizes.
- Automatically accounts for water settling.
- Multiple measurements at each probe position.
- Percent Depth-Dose data plotted in real-time.
- Quickly export data to a spreadsheet (.csv).
- Optional Chart displays: View rate or chart measurements plotted against depth (Table View) or time (Real-time View).
- Averaging mode: Automatic averaging of sequential readings.
- Streaming rate mode: Record unfiltered 10 hz rate readings for immediate measurement feedback.

Remote Operation of Scanning Arm

- View detector depth in real-time.
- Set/move to origin.
- Move to specific depth.
- Step probe by customizable distance.

Operate Electrometers (SuperMAX/MAX 4000) via Software

- View rate/charge measurement data in real-time.
- Set range and bias voltage.
- Perform charge collection using all modes. (timed + repeating, continuous, triggered)
- Automatic recording of data.

DV1D

HOME

Brochure 1 of 2

ADDITIONAL ACCESSORIES

EXRADIN Ion Chambers

- Inherently waterproof
- Fully guarded for uniform field line measurements
- Constructed of rugged, homogeneous, conductive plastic for years of durability
- Manufactured from Shonka air equivalent and tissue equivalent plastics
- 5 year warranty

1 mm Lead Foil

- Absorb electrons according to TG-51 procedures
- Easily slide inside wedge tray or tape to collimator
- 20 cm x 20 cm x 1 mm
- Protective coating provides rigid strength to lead

SuperMAX Electrometer

- Two independent measurement channels for ratio-based acquisition
- Easy-to-use touch-screen interface
- Comprehensive chamber library
- 5 year warranty

DOSEVIEW 1D SPECIFICATIONS

DIMENSIONS

1D SCANNING ARM	*Height:* 48.26 cm (19.0 in) (2.67 in)	*Width:* 6.77 cm
	Length: 9.44 cm (3.72 in)	
WATER TANK REF 91800	*Height:* 36 cm (14.17 in) (11.81 in)	*Width:* 30 cm
	Length: 34 cm (13.39 in)	
WATER TANK REF 91810	*Height:* 36 cm (14.17 in) (15.75 in)	*Width:* 40 cm
	Length: 42 cm (16.54 in)	

WATER TANK MATERIAL Clear acrylic 0.95 cm (0.375 in)

WEIGHT

1D SCANNING ARM	1.36 kg (3 lbs)
HANDHELD CONTROLLER	0.23 kg (0.5 lbs)
WATER TANK *(ref 91800, empty)*	6.35 kg (14 lbs)
WATER TANK *(ref 91810, empty)*	10.43 kg (23 lbs)

MAX SCANNING ARM TRAVEL 27.5 cm (10.8 in)

IONIZATION CHAMBER HOLDER DIAMETER ACCOMMODATION

Max: 20 mm (0.79 in) *Min:* 6 mm (0.24 in)

BACKSCATTER CLEARANCE AT 25 CM DEPTH

~ 8 cm (3.1 in) including phantom base

ACCURACY OF POSITION ± 0.05 mm (0.002 in) over entire 275.00 mm

REPEATABILITY OF POSITION ± 0.05 mm (0.002 in) over entire 275.00 mm

OPERATING CONDITIONS

PRESSURE	680 – 800 mm Hg
TEMPERATURE	10 – 40 °C
RELATIVE HUMIDITY	30 to 75%, non-condensing

STORAGE CONDITIONS

TEMPERATURE	-40 to 70 °C
RELATIVE HUMIDITY	0 to 95%, non-condensing

CABLING 100 ft extension cable provided (standard RS-232 configuration)

POWER REQUIREMENTS AC OUTPUT 12 VDC @ 1.25 A

OPTIONAL DETECTOR BRACKETS

PTW Markus® (ref 70850)

PTW Roos® (ref 70852)

Vertical Diode Holder (ref 70851)

CONFORMITY CE

SOFTWARE REQUIREMENTS

Operating System	Windows Vista® Windows® 7
Connectivity	9-pin, RS-232 serial port or USB port with USB to RS-232 adapter

Markus and Roos are registered trademarks of PTW Freiburg GmbH. Specifications subject to change without notice.

DV1 D

HOME

Brochure 2 of 2

QA BeamChecker Plus

- ✓ Simple, fast, reliable daily Linac QA
- ✓ Automatic energy detection
- ✓ Software - free operation
- ✓ Convenient data trending and reporting

Brochure

QASC

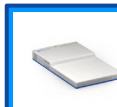

SDVP


SuperMAX


EXRADIN


PIPSpro


DV1D


QACC

HOME

CYBERKNIFE QA

STANDARD IMAGING

QA BEAMCHECKER PLUS

DAILY LINAC QA

The QA BeamChecker Plus allows for fast, reliable, and uncomplicated daily QA of Varian, Elekta, Siemens and Accuray Treatment Machines

THE QA BEAMCHECKER PLUS IS SPECIFICALLY DESIGNED TO SAVE TIME while performing daily QA routines. Fewer trips in and out of the vault, automatic energy detection, quick measurements and customizable QA interface all contribute to save you time. View beam status in real time with the wireless capability or allow the unit to save data with no PC required using our patented software-free mode allowing for immediate pass/fail results. The unique and diverse capabilities of the QA BeamChecker Plus allow for exceptional speed and ease of use on any treatment system.

The QA BeamChecker Plus is used to perform routine daily QA measurements for traditional linear accelerators and rotational VMAT systems including those from Varian, Elekta, Siemens, and Accuray's TomoTherapy and CyberKnife. Data from high dose rate and flattening filter free capable machines such as the Varian TrueBeam and Elekta Versa HD are also seamlessly acquired.

"We have the QA BeamChecker Plus at three sites. It is the best device I have used in 25 years as a medical physicist."

Al Foster, PhD
Senior Medical Physicist
IU Health Ball
Memorial Hospital

The QA BeamChecker Plus performing a combined dosimetric check in rotational mode

Patented Software-Free Technology

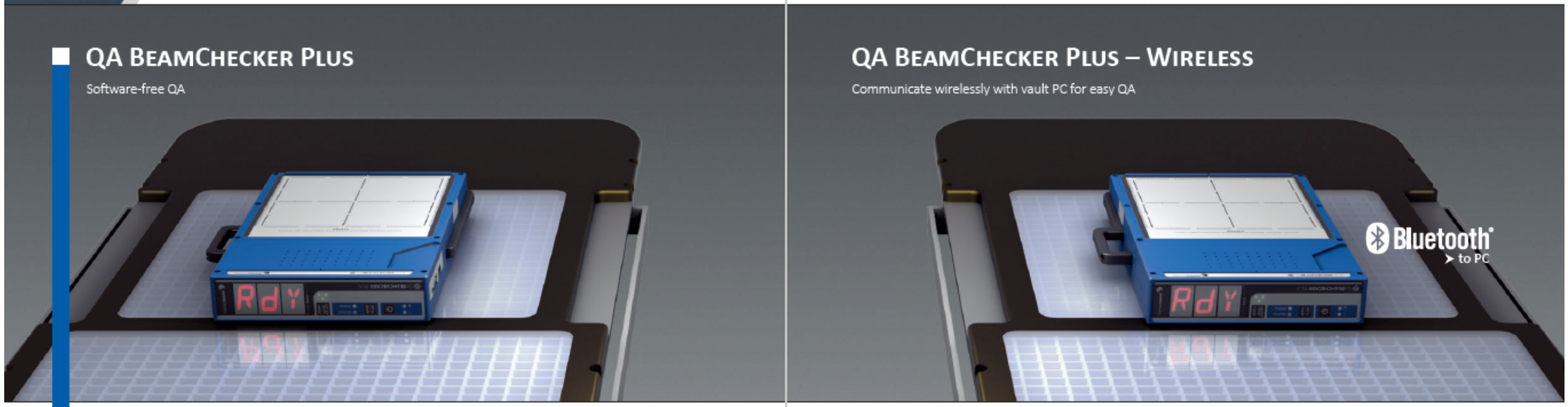
After creating measurement baselines using the included PC software, no cables or software are needed for your daily QA routine. With automatic energy detection you can complete efficient daily QA in seconds.

CYBERKNIFE QA

STANDARD IMAGING

QA BeamChecker Plus

Software-free QA



Software-Free Mode

A pass/fail result for each energy is indicated in a large, brightly lit display, clearly visible from the patient monitor. Unlike other devices, you do not have to control the QA BeamChecker Plus from a PC. The device is a cable- and software-free solution right out of the box, with a more streamlined user experience than the competition to help minimize the potential for user error. This means less clutter in the accelerator room, no cable replacement costs, and a safer work environment.

Multiple Vault Capability

Up to 9 treatment rooms/vaults can be managed with just one QA BeamChecker Plus. Using the communication software, a complete set of baselines can be created for each specific room. Once a room has been created, it's saved within the QA BeamChecker Plus and available in any module, including software-free. Simply select the desired room and the QA BeamChecker Plus automatically detects the daily energy output by the treatment machine.

Automatic Energy Detection

When a beam is delivered, the QA BeamChecker Plus automatically begins measurement while simultaneously applying temperature and pressure correction, detecting the energy type, and determining beam constancy, flatness, and symmetry. Once complete, the data is saved directly to the device for later upload and review. The instrument then resets itself in under 10 seconds for the next energy. Complete a typical morning QA routine in minutes!

QA BeamChecker Plus – Wireless

Communicate wirelessly with vault PC for easy QA

Real-Time Operation

Real-Time Operation module provides the same QA information as the software-free module, however it displays comprehensive measurement parameters at the time of exposure via a PC software interface. Get access to baseline settings along with percentage comparisons, temperature/pressure readings, and precise chamber measurement information. Information collected in this module can be optionally discarded from the QA record, making this module ideal for teaching, troubleshooting, and research.

Wireless Communication

The Bluetooth Adapter Kit allows PC-only operations to be performed wirelessly. Take advantage of this convenient kit and experience the additional freedom of using the software while remaining wireless. Upgradeable at any time.

Data Storage And Network Compatibility

The QA BeamChecker Plus database can be stored and maintained anywhere, including network locations. Install the QA Beamchecker Plus software to an unlimited number of computers and access all measurement data from anywhere in the facility quickly and easily. Only one database file is needed per QA BeamChecker Plus for easy backup and worry-free restoration.

Intuitive tree structure makes managing baselines and measurement data for multiple treatment rooms quick and efficient

CYBERKNIFE QA

STANDARD IMAGING

ADDITIONAL ACCESSORIES

Add even more QA flexibility

Gantry Mount

Attach the QA BeamChecker Plus to the linear accelerator gantry for precise, repeatable positioning. Rotate the treatment machine and test at multiple angles for even more QA options.

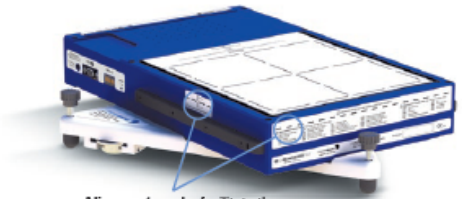
Precision Tomotherapy Leveling Platform

Level the QA BeamChecker Plus on the TomoTherapy Hi•Art System treatment couch for virtual and real isocenter laser accuracy measurements. Integrates seamlessly with other TomoTherapy daily QA procedures. Bubble level stores conveniently when not in use.

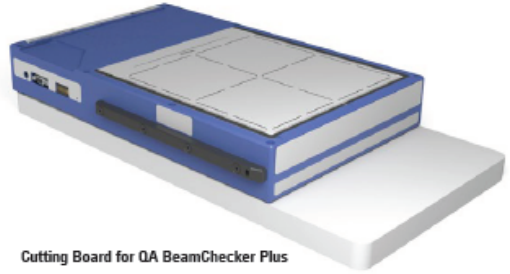
Cutting Board for QA BeamChecker Plus

Equipped with implanted fiducial markers which allow for accurate alignment of the QABC+ using the CyberKnife system's treatment localization system (TLS).

- Accurate daily output constancy test in 8 minutes
- Daily QA can be performed without CyberKnife robot operation
- Allows morning QA by therapists instead of physicists, matching workflow of standard linacs



Alignment marks facilitate the TomoTherapy® laser accuracy test (D6)



Cutting Board for QA BeamChecker Plus

QABC+

HOME

Brochure 3 of 3

Tomotherapy Hi•Art System Daily QA

The QA BeamChecker Plus can be used for TomoTherapy Hi•Art System daily QA tests following those listed in J.D. Fenwick et al, "Quality assurance of a helical TomoTherapy machine". Output constancy (D1), energy constancy (D2), lateral profile constancy (D3), combined dosimetric check (D5), and laser accuracy tests (D6) are all accommodated by the instrument. Develop custom static and 4D treatment plans and deliver to the QA BeamChecker Plus to establish baselines. Additionally, multiple static and dynamic plans can be developed to test each jaw width setting individually. Complete your daily QA tests by simply delivering these plans. Only two exposures are needed to perform these tests; one in a static module, with the gantry fixed in a vertical position, and one in a dynamic module. No re-positioning of the QA BeamChecker Plus is necessary between the two exposures, saving you time.

QA BEAMCHECKER PLUS SPECIFICATIONS

8 VENTED IONIZATION CHAMBERS, FULLY GUARDED	
One center detector, Four quadrant detectors (7.5 cm from center), Three energy identification chambers	
CHAMBER VOLUME	0.6 cm^3
PARALLEL PLATE SEPARATION	4.0 mm
COLLECTION ELECTRODE	1.39 cm diameter
INHERENT WATER-EQUIVALENT BUILDUP	
PHOTONS: 3.5 cm	ELECTRONS: 1.5 cm
SUPPORTED ENERGIES	
PHOTONS: ^{60}Co to 25 MV	ELECTRONS: 6 MeV to 25 MeV
MULTIPLE VAULT CAPABILITY	
Up to 9 rooms, any combination of linear accelerator or rotational systems	
TEMPERATURE AND PRESSURE MEASUREMENT	
Precision sensor on board, automatic compensation	
DIMENSIONS (QABC Plus)	*Height:* 6.15 cm, 2.42 in *Length:* 40.64 cm, 16 in *Width:* 30.86 cm, 12.15 in *Weight:* 5.0 kg, 11 lbs
DIMENSIONS (Power/Data Cradle)	*Height:* 7.16 cm, 2.82 in *Length:* 29.21 cm, 11.50 in *Width:* 10.16 cm, 4.0 in *Weight:* 1.8 kg, 4 lbs
LIGHT FIELD ALIGNMENT	20 cm x 20 cm alignment grid for easy setup
TOMOTHERAPY ALIGNMENT	
Three 2 mm embedded lead BBs, top, rear, side alignment marks	
REAL TIME CLOCK	Date and time stamp for all measurements

INTERNAL MEMORY	Store 512 data points before transfer required
POWER/DATA CRADLE	
Interface for battery charging and serial communications	
Two 9 pin serial cables provided, 7.6 m (25 ft) and 33 m (100 ft)	
POWER	
BATTERY:	1.3 Ah SLA, approximately 4 hours continuous use, user replaceable
CHARGER INPUT:	90 - 240 VAC, 50-60 hz, IEC 60601-1 approved wall mounted power supply
OPERATING SYSTEM	
	Microsoft® Windows® 7 *SP1 or higher* Microsoft® Windows® 8.1 *SP1 or higher* Microsoft® Windows® 10 *SP1 or higher*
PROCESSOR	Intel® or AMD®, 1 GHz or greater
MEMORY	1 GB or greater
HARD DRIVE	1 GB or greater
SCREEN RESOLUTION	1024 x 768 or greater
PERIPHERALS	CD-ROM Drive, One available serial port
OPTIONS	
Gantry Mount (REF 70500)	
Additional Power/Data Cradle (REF 70502)	
Serial to USB adapter (REF 70503)	
Precision TomoTherapy Leveling Platform (REF 70505)	
Bluetooth Adapter Kit (REF 70504)	

[1] *J D Fenwick et al. "Quality assurance of a helical tomotherapy machine". Phys. Med. Biol. 49(2004) 2933-2953.*

SuperMAX Electrometer

- ✓ Premier two-channel, reference grade electrometer
- ✓ Built-in Detector library
- ✓ Easy to navigate color touch screen interface
- ✓ Exradin W1 Scintillator Integration

QASC

QABC+

SDVP

EXRADIN

PIPSpro

DV1

QACC

D

Brochure

Home

STANDARD IMAGING

SUPERMAX ELECTROMETER

DOSIMETRY, ADVANCED

An intuitive user-interface and a host of innovative features make the SuperMAX the premier reference-grade electrometer on the market

THE PREMIER, REFERENCE-GRADE ELECTROMETER

The SuperMAX Electrometer is the culmination of one simple notion – *surpass expectations for a reference-grade electrometer.* Each aspect of the SuperMAX has been engineered to integrate seamlessly into clinical quality assurance, forming the preeminent dosimetry tool available.

- **Superior Accuracy and Stability**
  Standard Imaging's legacy of accuracy, and rounds of rigorous testing, ensure the SuperMAX exceeds requirements for reference grade instruments. This exceptional stability allows for measurement after only one minute of warm-up time.
- **Touchscreen Operation**
  A color, touchscreen interface has an on-screen keypad and pull-down menus for easy operation.
- **Unmatched Versatility**
  Two measurement channels with independent control over range, bias voltage and applied factors, and an extensive range are ideal for external beam IMRT, brachytherapy and stereotactic radiosurgery.

"The SuperMAX is a great electrometer. Its interactive screen is big and easy to see and use. Its small footprint makes it possible to set-up on even the most crowded work surface. Most importantly, it is fast to warm up, precise and very reliable. I particularly like the fact that the SuperMAX will store calibration factors for all of my chambers, as well as all my readings from our evening of data collecting. The SuperMAX is a great piece of gear."

David J. Misisco, MS
Medical Physicist
Community Hospital of the Monterey Peninsula

SuperMAX Electrometer shown with the Exradin A19 Ion Chamber and the Exradin A10 Ion Chamber

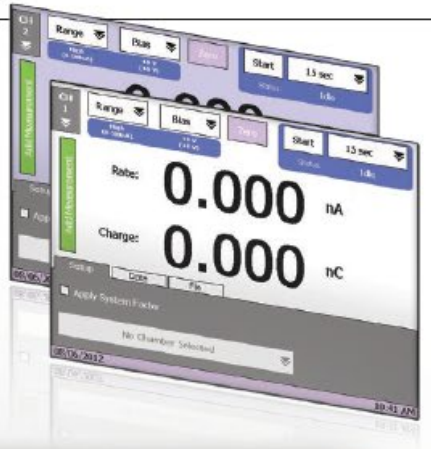
SuperMAX
HOME
Brochure 1 of 3

Two Independent Channels

The SuperMAX Electrometer has two measurement channels with independent control over range, bias voltage and applied system factors. Both channels have an extensive range (0.001 pA to 500.00 nA, 0.001 pC to 999.9 µC) with automatically scaling units, ideal for a spectrum of applications, including:

- Cross calibration between two chambers
- Isocenter versus off-axis comparisons
- In-air versus in-water comparisons

These channels can be viewed individually in full screen or together in a split-screen interface, with the option to display the ratio of the two channels.



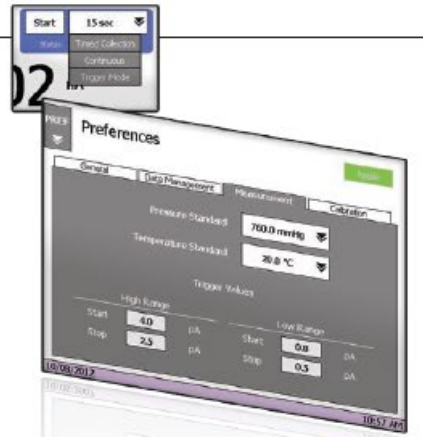
Flexible Collection Modes

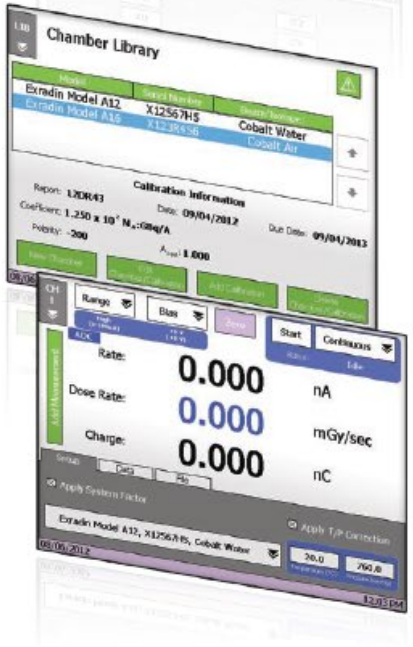
The SuperMAX Electrometer has three charge collection modes, facilitating data acquisition in a variety of clinical applications.

- Timed Charge Collection: obtain measurements in 1 second intervals from 1 second – 24 hours. Perform these measurements sequentially without re-zeroing the electrometer.
- Continuous Charge Collection: Manual start/stop measurement for an unlimited duration.
- Triggered Charge Collection: Automatically start, stop and save measurements at custom thresholds for high and low ranges. This mode is ideal for external beam measurements.

Comprehensive Detector Library

A detector library built into the SuperMAX can store over 100 calibrations and/or system factors, which are easily input using a step-by-step wizard. Once entered, these corrections can be quickly sorted and applied for real-time display of dose or dose rate values. Factor-applied measurements are shown side-by-side with raw data for increased analysis. No extra PC software or cables are needed to take advantage of this functionality.





SuperMAX

HOME

Brochure
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SuperMAX

HOME

Brochure
3 of 3

EASILY SAVE AND EXPORT DATA

As charge collections are completed, measurements are automatically stored in a time- and date- stamped list. Rate or dose rate measurements can be added manually by tapping the "Add Measurement" button. At any time, this list can be exported to the USB flash memory in .csv or .txt files, transferred to a PC and opened in Microsoft Excel or other spreadsheet applications.

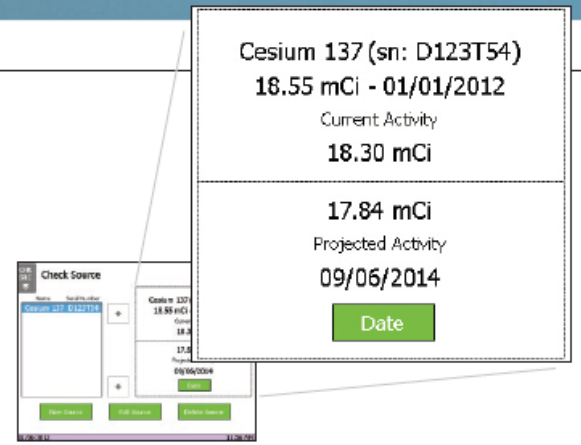
Exradin W1 Scintillator Integration

The Exradin W1 Scintillator is a new detector with characteristics that closely mimic water, negating many measurement corrections required with other detectors. When used in conjunction, these tools effectively eliminate Cherenkov Effect without the need for extraneous calculations. Two dedicated modes in the SuperMAX provide an intuitive interface for scintillator setup and measurement.

the Exradin W1 Scintillator

CHECK SOURCE UTILITY

The SuperMAX can store over 100 sources for quick projected strength calculations. Enter the known activity on a given date and the Check Source Utility can display either the current strength or calculate future strength.



SUPERMAX (REF 90018) SPECIFICATIONS

DISPLAY RANGE	
RATE:	*Low Range* 0.001 pA – 500.0 pA, 1 fA resolution *High Range* 0.001 nA – 500.0 nA, 1 pA resolution
CHARGE:	*Low Range* 0.001 pC – 999.9 μC, 1 fC resolution *High Range* 0.001 nC – 999.9 μC, 1 pC resolution
DIMENSIONS	*Height:* 8.1 cm, 3.2 in *Width:* 26.7 cm, 10.5 in *Length:* 21.1 cm, 8.3 in *Weight:* 2.4 kg, 5.3 lbs
CHARGE COLLECTIONS	
TRIGGER:	Automatic start, stop, reset and save data based on user defined thresholds (*Start:* 0.2 – 9.9 pA; *Stop:* 0.1 – 9.8 pA)
TIMED:	User set duration (*Range:* 1 s – 24 hours; *Increment:* 1 s)
CONTINUOUS:	Unlimited duration with manual stop
REAL TIME CLOCK	Date and time stamp for all measurements for easy identification
INTERNAL MEMORY	Store preferences, >100 sources, >100 chamber/system factors
RANGE SWITCHING	User selectable — High or Low
CONFORMITY	CE 93/42/EEC Reference class according to IEC 60731
DISPLAY	6.4" color TFT, touchscreen
INPUT	(2) BNC two lug, triaxial connector
BIAS VOLTAGE	Nominal ± 1000 volt bias
USER SETTINGS:	– 1000 to – 100, 0; 100 to 1000 (set in 1 volt increments)
POWER	100-240 VAC, 0.5 A max, 50/60 Hz input to external power supply, 9 VDC, 1.7 A power supply output to electrometer input, UL/TUL listed power supply
ZEROING	Automatic zero function, user activated
OUTPUT	(2) USB ports
OPTIONS	
SuperMAX Accessory Kit (REF 72245) *Includes extra stylus, extra USB flash drive, and set of 5 extra screen protectors*	
SuperMAX Electrometer with TNC connector (REF 90018-C)	

PERFORMANCE SPECS

RESOLUTION	High Range: 0.001nA Low Range: 0.001pA	IEC 60731 (Reference Class) requirement: ± 0.25%
MEASURING RANGE	High Range: 0.400 nA – 500.0 nA	Low Range: 0.400 pA – 500.0 pA
MEASURING RANGE (CHARGE)	High Range: 0.400 nC – 999,999 nC Low Range: 0.400 pC – 999,999 nC	
REPEATABILITY	± 0.1%	IEC 60731 requirement: ± 0.5%
LONG-TERM STABILITY	± 0.5%	over one year
STABILIZATION TIME	± 0.5%	IEC 60731 requirement: ± 0.5% of value at 1 hr for measurements taken at 15 min and 6 hrs
ZERO DRIFT	High Range: < ± 0.1% Low Range: < ± 0.25%	IEC 60731 requirement: ± 0.5%
ZERO SHIFT	High Range: < ± 0.1% Low Range: < ± 0.25%	IEC 60731 requirement: ± 0.5%
NON-LINEARITY	± 0.2%	IEC 60731 requirement: ± 1.0%
RESPONSE TIME	High Range Rate: 3 s	Low Range Rate: 15 s All Ranges Charge: < 0.5 s

Specifications subject to change without notice.

PIPSpro Software

- ✓ Most widely used imager QA program in the market
- ✓ Comprehensive filmless QA provides quantitative measurements, including SRS
- ✓ Come back to the fold - Amnesty Maintenance upgrade to latest version is a great bargain
- ✓ Comprehensive software covers TG142 requirements with single easy-to-use interface

QASC

QABC+

SDVP

SuperMAX

EXRADIN

DV1D

QACC

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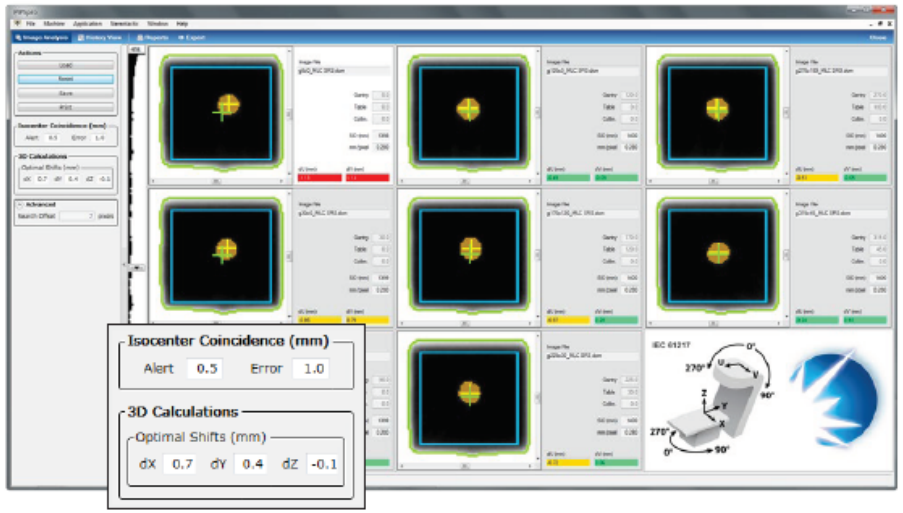
STANDARD IMAGING

PIPSPRO SOFTWARE

STEREOTACTIC MODULE

PRECISE QA FOR STEREOTACTIC RADIOSURGERY



Quick, Comprehensive Stereotactic QA

The Winston-Lutz test verifies machine isocentricity by using a ball marker aligned at isocenter to acquire a series of images at a variety of couch and gantry angles. PIPSpro's Stereotactic Module allows you to use your portal imaging system to acquire these images – no film required. Once the images are loaded into the Stereotactic Module, the software performs an analysis to determine the isocentricity with 3D results. X, Y, and Z shifts are reported with 0.1 mm accuracy, allowing you to have more confidence in your setup and treatment. The Stereotactic Module can accommodate both MLC and cone-based systems.

Unique Auto-Load feature

With the Auto-Load feature, analysis of Winston-Lutz images can be accomplished in seconds. Simply choose the folder that holds your images, and PIPSpro's Stereotactic Module takes care of the rest.

Track and Trend Results

Your results are saved with the built-in SQL database and the included trending features, allowing you to track any variations in your system that may require your attention.

FEATURES

- Automatically analyze Winston-Lutz test images
- 3D offsets reported with 0.1 mm accuracy
- Unique auto-load feature delivers results in seconds
- Analyze both cone based and MLC based stereotactic treatments
- Database saves all results for future analysis
- Trending module alerts you to any variations in your system
- Upgrade to the full PIPSpro software at any time

Winston-Lutz Phantom (sold separately)

The optional Winston-Lutz Phantom is designed for easy setup and precise positioning at isocenter. The phantom is comprised of a 3 mm aluminum sphere, carbon fiber rods attached, and a triangular base. The base provides both stability, and a three-point leveling system, making adjustments a breeze.

Winston-Lutz Phantom
shown with 3D Adjustment Holder (ref 72427)

PIPSPRO SOFTWARE SPECIFICATIONS

OPERATING SYSTEM	WINDOWS 7 (SP1) *or better* WINDOWS 8.1 (SP1) *or better* WINDOWS 10 (SP1) *or better* .NET 4.5.2 *or better*
PROCESSOR	Intel® or AMD® 1 GHz or greater
MEMORY	1 GB (3 GB recommended)
HARD DRIVE	3 GB free space for software installation. Sufficient space to store input image and/or MLC Log files. 5 GB or greater if installing SQL Server Express on the install host.
SCREEN	1152×864 XGA+(4:3) 1600×900 (16:9) or higher 16 bit HiColor or greater
DVD DRIVE	2X speed or greater
VIRTUAL MACHINES	Must support WMI (Windows Management Instrumentation) Citrix XenDesktop and Citrix XenApp
DATABASE MANAGEMENT	SQL Server 2008 R2 minimum, SQL Server 2014 recommended.
PRODUCT STANDARDS	Designed to meet IEC 60601-1-4 CE

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QA Cross Checker

- ✓ Comprehensive beam verification and analysis
- ✓ Provides energy, output and profile constancy a single measurement for each energy
- ✓ High quality, consistent inline/crossline profile measurements required by TG-142
- ✓ Pairs with included software for lightning fast reports

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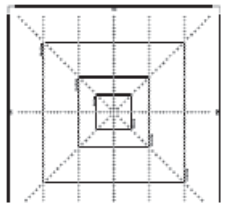
QA CROSSCHECKER

EFFICIENT & RELIABLE MACHINE QA

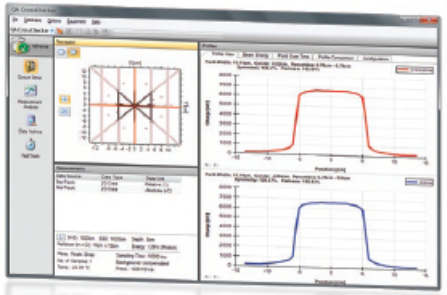
Comprehensive beam verification and analysis

QA CrossChecker provides the perfect solution for beam and machine verification — without the hassle of large phantoms. Coupled with powerful software, the QA CrossChecker is accurate to within 0.5% of a traditional water phantom, making it the easiest way to verify beam output.

With a powerful interface and a host of customizable components, the QA CrossChecker software is an essential tool for comprehensive machine verification and workflow optimization. Quickly perform all of your daily, weekly or monthly checks via seamless, pre-defined queues and protocols.



453 air-vented pixel ionization chambers



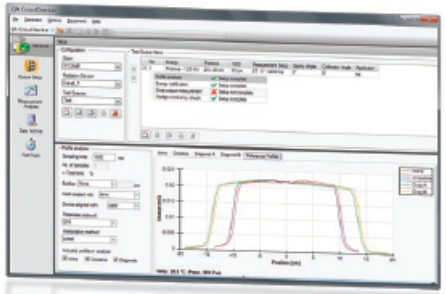
Optimized Detector Positioning for Key Linac QA Routine

453 air-vented pixel ionization chambers with optimized 5 mm spacing allows for accurate machine QA including dosimetric, mechanical, gating and MLC performance testing. Parallel readout from independent electrometers allows for fast measurements.

Water Phantom Free

Compare results to water phantom baselines and achieve accuracy within 0.5%. Perform accurate monthly machine QA without the hassle of a water phantom.

Optional Gantry Holders
Mount detector and build-up plates to the gantry head



Only One Delivery Required

Capture and analyze all parameters with just a single beam delivery, allowing for quick and detailed measurements of constancy, as well as flatness and symmetry along all four axes (in-plane, cross-plane, and diagonals). QA CrossChecker is designed to achieve fast and efficient workflow. Set up and record your measurement geometry, queues and analysis protocols once. A fast and efficient design ensures only one-time setup of measurement geometry, queues, and analysis protocols.

Pair with Software for Lightning Fast Reports

QA CrossChecker automatically compares energy measurements with their corresponding reference values. Test reports are created according to user-defined tolerances, and include reference values, allowing you to easily identify changes in your machine.

Real-Time Measurements and Analysis

Execute pre-defined queues with consecutive measurement and analysis of:

- CAX field width and penumbra
- Symmetry, flatness and wedge check
- Dose output and energy verification
- Inline, crossline, and diagonal profiles
- Light-field vs. radiation-field check

Tolerances can be set by manual input reference measurements.

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Brochure 1 of 2

CYBERKNIFE QA

STANDARD IMAGING

FEATURES

Fast, Real-Time Measurements & Analysis

- Efficient execution of pre-defined queues and simultaneous measurement capability results in analysis of: field width and penumbra, flatness and wedge check, beam center, light-radiation field coincidence, dose output and energy verification.
- Full MLC test verification including positioning, picket fence and leaf speed.

Automated Archiving

- Automatic database storage ensures data integrity and enables advanced sorting, grouping, and filtering.

Customizable Interface

- Customizable measurement settings allow for creation of unique templates and data analysis with user-specified tolerances or reference measurements comparison.

Robust Reporting

- Automatically compare measurement sets of each energy with the reference values.
- Generate test reports based on chosen pass/fail criteria and reference values.
- Quickly print all measured and archived data.

Easy Data Collection & Comparison

- Easily compare data with dedicated trend analysis via the simplified yet comprehensive interface.
- Print single reports for all or individual measured parameters.
- Unique SQL database reporting allows for long term trending analysis.

Optional Gantry Holders & Build-Up Plates

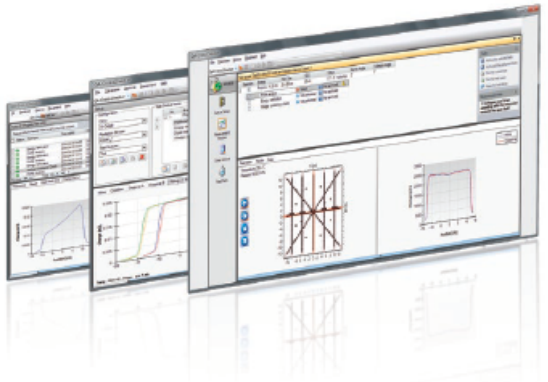
- Easy to attach gantry holders enable precise and rigid mounting.
- Various build-up plates available for verification of all linac energies.

Optimized Data Collection

- 40 X 40 cm field measurement (with 76 cm SSD gantry mount).
- Parallel readout from independent electrometers.

Versatile Verification Plates

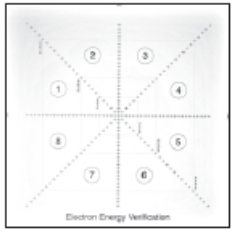
- Optional energy constancy verification plates allow for measurement of electron and photon beams.



Seamless Energy Constancy Verification Plates

Accompanying software automatically compares measurement sets of each energy with the corresponding set of reference values. A test report is created to track chosen pass/fail criteria and reference values.

- Electron beams from 4 to 22 MeV
- Photon beams of any energy from Co60 to 25 MV



View Data in Graphical or Tabular Format

Automated archiving in a database with advanced search functions for grouping, filtering and sorting. Easily compare and trend using a simple, yet comprehensive interface. Print out measured and archived data, and generate comprehensive test reports based on the user-defined tolerance levels and reference values. You can also print out measured and archived data for a single test or an entire data set.

Customizable Interface

Create unique templates and data analysis routines. Compare results to reference measurements or user-defined tolerances for data specific to your clinic. Use Free Measurement Mode for fast checks and in-depth beam steering in real time.

QA CROSSCHECKER SPECIFICATIONS

Photons	^{60}Co to 25 MV
Electrons	4 to 22 MeV

ION CHAMBER

Diameter	3 mm
Height	4 mm
Volume	0.035 cm^3
In-plane Resolution	5 mm
Cross-plane Resolution	5 mm
Diagonal Resolution	7 mm

SOFTWARE SPECIFICATIONS

Operating system	Windows Vista® Windows® 7
Processor	Pentium® (or equivalent), 1.8 GHz or better
Memory	2 GB RAM or greater
Hard Drive	6 MB available, 40 GB for data archiving
Screen resolution	1024 x 768 or higher
Ports	Available Ethernet required

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IMSure 3D™ Software

Automated second check with Monte Carlo accuracy.

Adaptivo

LinacView

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Empower Your Pre-Treatment QA

Trusted, Independent Patient Specific QA

Adaptivo

LinacView

Monte Carlo Accuracy

The Monte Carlo algorithm is the gold standard for patient specific QA calculation accuracy. Custom machine-specific beam models ensure the highest accuracy.

Absolute Automation

Automated, time-saving workflow produces 3D dose calculations in minutes with reliable results regarding treatment plan quality.

Quick Calculations

Proprietary multi-core CPU based variance reduction allows for calculation times of around a minute.

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Time-saving QA Routine

Software easily identifies errors and provides tools for an intuitive, comprehensive analysis. Quickly and easily assess plans from anywhere using the web-based interface.

Adaptivo

LinacView

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STANDARD IMAGING®

Maximize Monte Carlo

Supports all major treatment machines:

- Elekta®
- Varian® (including Halcyon™ and Ethos™)
- Siemens®
- Accuray®
- TomoTherapy®
- Radixact®
- CyberKnife®-systems
- ZAP-X®

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