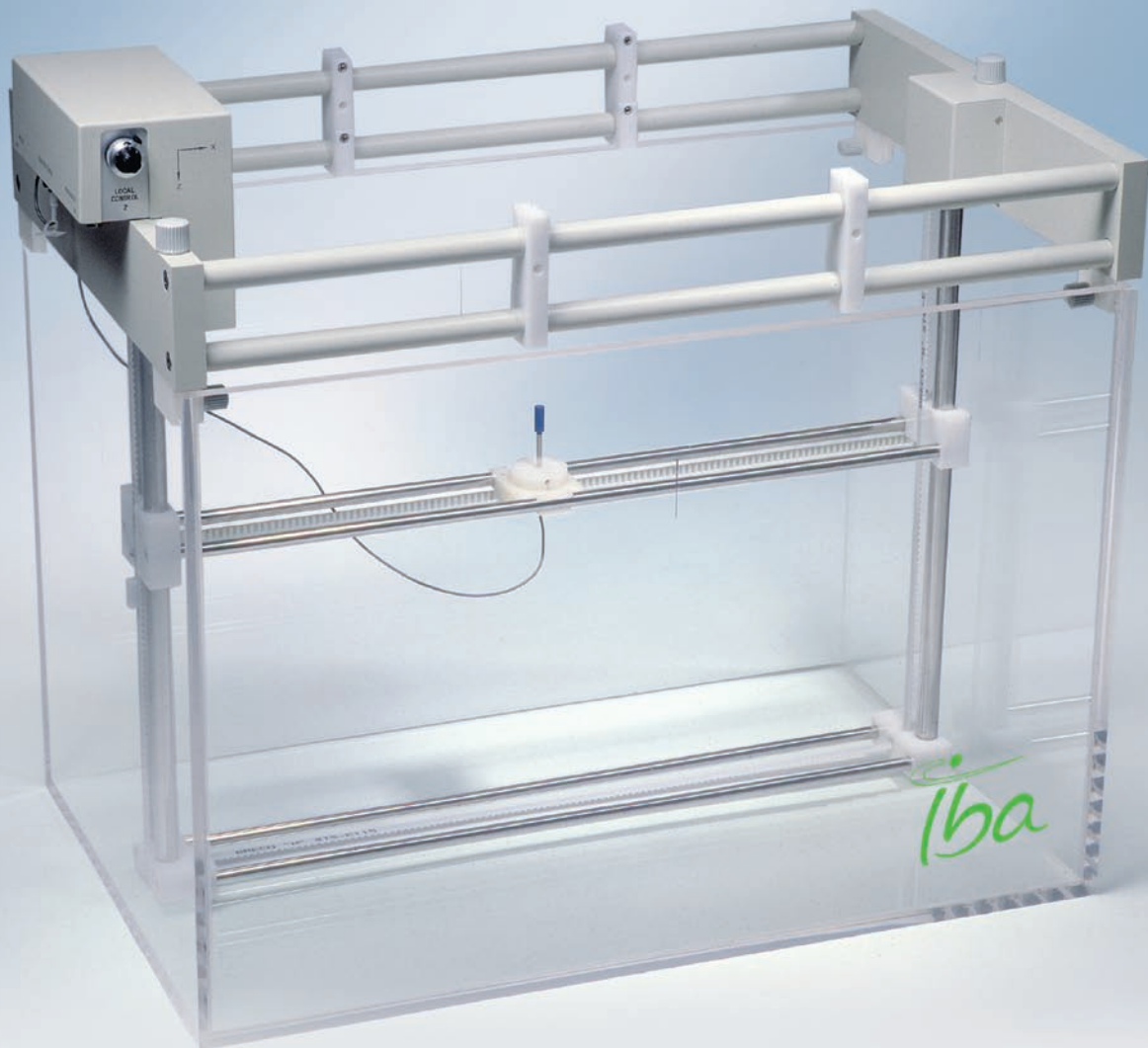




RFA-200

The versatile 2D Radiation Field Analyzer



Competence in
Radiotherapy Dosimetry.

Quality without compromise

- Adaptive scan parameters for fast scan times
- Limited size and weight for easy alignment
- Designed for commissioning, acceptance, testing and regular QA of linear accelerators
- Robust construction with steel enforced toothed belts for exact positioning
- Dual electrometers with accurately matched time constants for precision measurements
- The system is operated through the **OmniPro-Accept (V 6)** software
- Each component has been carefully designed for top performance
- Radiation-resistant detector holders for long-term durability

most **FAST**est
most **ACCURATE**
most **RELIABLE**

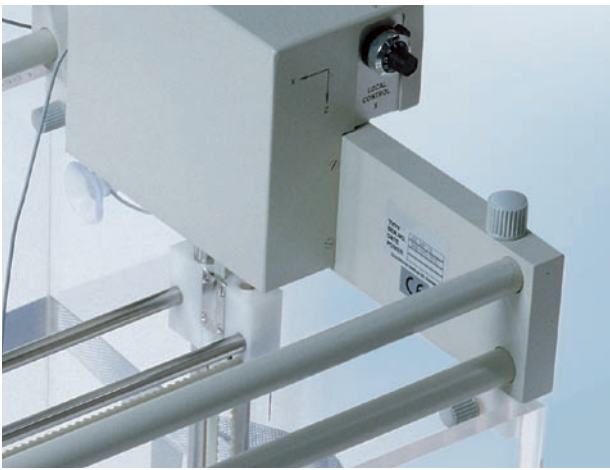
The RFA-200 is a two-dimensional radiation field analyzer, designed for commissioning, acceptance, testing and regular QA of linear accelerators.

Each component of the system is carefully designed for top performance, ensuring the same quality and versatility found in all IBA Dosimetry water phantoms.

- Robust construction with steel enforced toothed belts for exact positioning
- Ironless precision DC motors eliminate backscatter artefacts
- High linearity feedback potentiometers for accurate measurements
- Radiation resistant detector holders for long-term durability
- Dual electrometers with accurately matched time constants for precision measurements
- Computerized feedback gain circuits for optimum use of the 14-bit analogue-digital converter
- Adaptive scan parameters for fast scan times

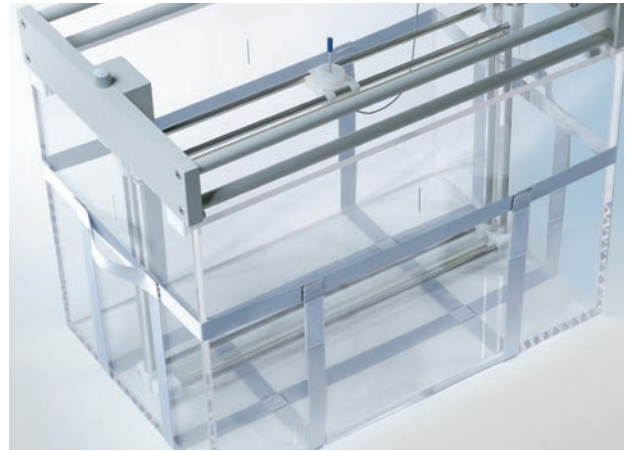
Versatility

The limited size and weight of this 2D water phantom combined with the comprehensive software also used in our top-of-the-line (3D) phantoms, makes it the most versatile 2D system available on the market today.



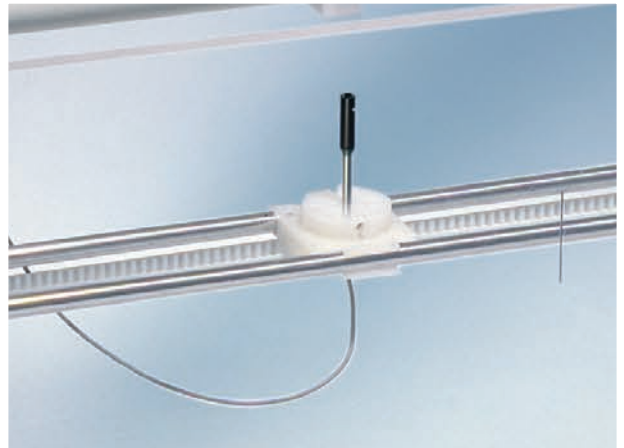
Easy alignment

The phantom weighs less than 135 kg (300 lbs) when it is filled with water. This makes it possible to use the treatment couch instead of a separate lifting device for positioning adjustments. The levelling is very fast and accurate, since the scanning mechanism is levelled independently of the phantom, using three pivot points.



Portability

With the carrying straps the system is very easy to transport. The controller, detector, cables and even a laptop can easily be fitted inside the phantom during transportation. This makes it the ideal tool for a service engineer or consulting physicist.



Absolute Dosimetry

The small dimensions of the RFA-200 phantom make it ideal for Absolute Dosimetry too, using either the built-in field class electrometer or a stand-alone unit, such as the DOSE 1 from IBA Dosimetry. As an option to the standard detector holder a large variety of holders are available for the most popular ion chambers for Absolute Dosimetry.

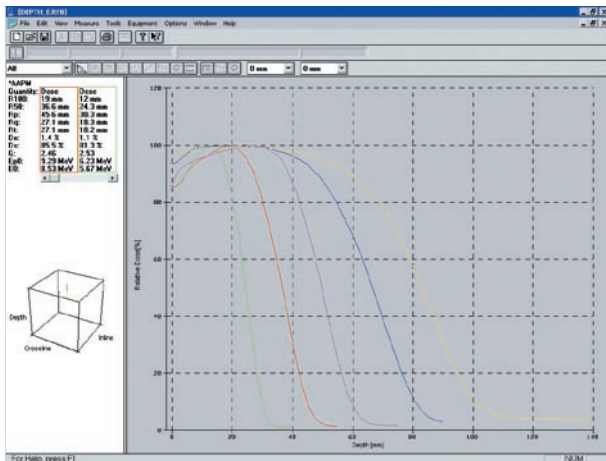
OmniPro-Accept (V 6)

The integrated solution for data acquisition and analysis in dosimetry

OmniPro-Accept (V 6) is the advanced software platform to facilitate fast and accurate commissioning and quality control in therapy radiation fields.

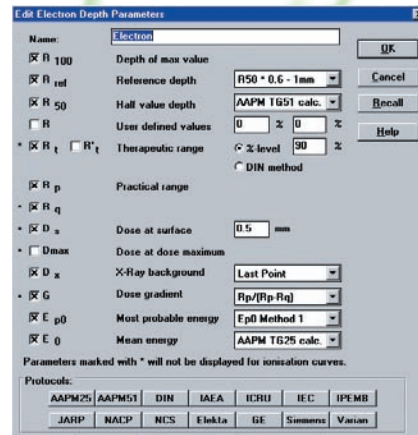
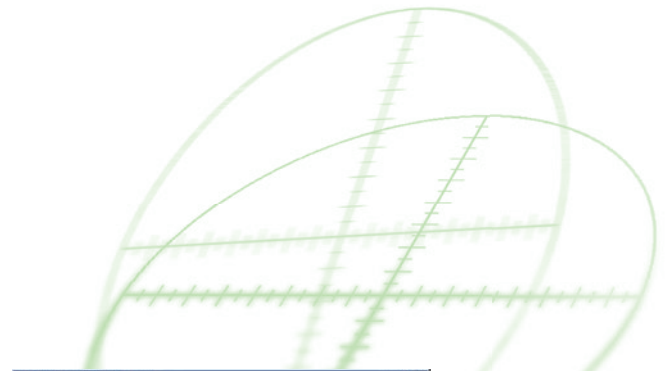
OmniPro-Accept (V 6) incorporates latest software technology to seamlessly integrate a variety of IBA Dosimetry devices such as water phantoms, film scanner, in-air scanners, all types of detectors as well as multi-detector array.

Measurement sequences can easily be set up or generated automatically with the intuitive graphical environment. The measured data is visualized in a clear, informative way to allow fast and precise analysis.



OmniPro-Accept (V 6) provides powerful filter functions to select data view. Use icon buttons to view depth doses, profiles, fanlines, point to point, isodoses, TMR and absolute dose.

OmniPro-Accept (V 6) supports all commonly used dosimetry protocols (e.g. IEC, IAEA, DIN...) as well as the specifications of the Linac manufacturers. Interface programs for conversion and transfer of beam data to all commercial RTP systems are available.



Real-time parametrization is done directly during measurement according to all standard dosimetry protocols. Only one click to convert from ionization to dose.

Features

- Integration of water, in-air and film devices
- Integration of l'mRT QA device
- Intuitive and informative graphic display
- Backward compatibility with RFAplus and WP700 data (1D profiles + isodoses)
- Data in the coordinate system of the accelerator
- Real-time data analysis
- Powerful tools to create and administer measurement queues
- Support of all dosimetry protocols and Linac manufacturer specifications
- Multi-tasking, also during measurements
- Filters for easy handling of large data sets
- Isodose calculation
- TMR measurements and TMR/TPR calculations
- Calibration of ionization chambers
- Absolute Dosimetry
- Automatic output factor table generation
- Wizard for measurement and conversion of all data needed for RTP systems

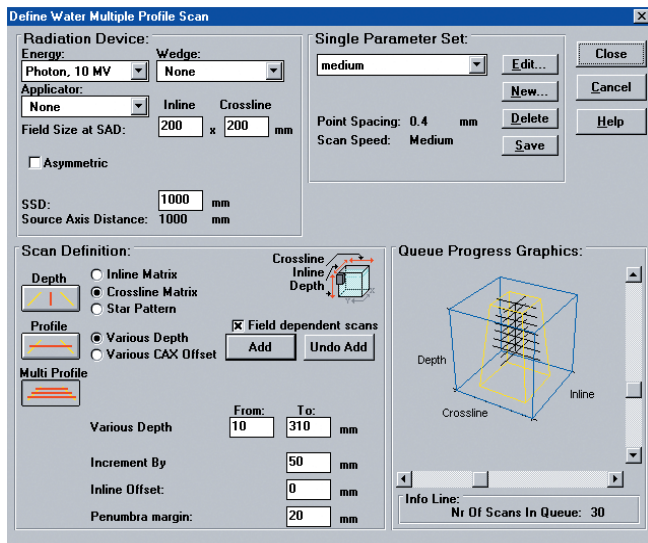
- Data tabulation
- Complete context sensitive and searchable help function
- Windows® compatible – easy exchange of data with Cut-Copy-Paste into Excel or other Windows® applications

The ultimate commissioning tool

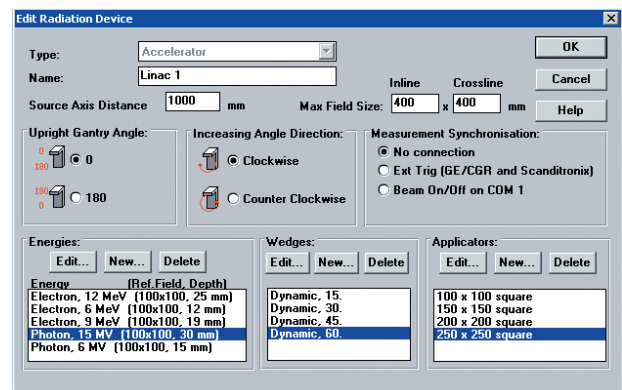
The advanced OmniPro-Accept (V 6) RTPS commissioning option guides the user through the entire commissioning process. It prepares the queue containing all necessary measurements, it converts the data and in addition provides tools to verify the consistency between measured and converted data.

OmniPro-Accept (V 6) strictly follows the specification of each planning system, matching the radiation devices at the clinic with exactly the demands of the RTPS.

- Measurements sorted to give the highest efficiency
- Calculates the expected time to complete the commissioning
- Prompts the user when an accelerator parameter has to be changed



OmniPro-Accept (V 6) provides an intuitive and powerful set-up of scanning sequences. The scanning order can be sorted manually or automatically to ensure the most efficient use of the beam time.



Fast selection of predefined equipment gives an overview and ensures that complete data is stored with the measured data.

Accessories for the complete system

Detectors

A complete range of detectors from in-house manufacturing can be used with the RFA-200 including ionization chambers, semiconductors and a multi-detector array.



Water reservoir

Separate tank trolley on wheels with a polyethylene water reservoir and a pump for uni-directional or bi-directional water transport to and from the water phantom.



Lift table

Separate water phantom carriage with manually or electrically (telescopic) operated lifting mechanism for positioning of the water phantom. The carriage has a levelling frame for fine adjustment as well as two fixed and two steerable rollers with brakes. The electrical version additionally has one compartment and two drawers for storing accessories and is equipped with a mechanism for shifting and rotating the phantom in horizontal direction.



Technical specifications

Water Phantom

Scanning area in water:	495 x 300 mm ² (X/Z)
Scanning area in air:	495 x 350 mm ² (X/Z)
Scanning speed:	15, 30 and 50 mm/s
Position reproducibility:	0.1 mm
Position accuracy:	0.5 mm
Wall material:	acrylic (plexiglass)
Approximate volume:	112 l
Watertank exterior dimensions:	638 mm (L) x 400 mm (W) x 440 mm (H)
Weight (filled with water):	23 kg (135 kg)
Detector holder material:	PVDF

Main Control Unit MCU with integrated dual-channel electrometer

Maximum resolution:	0.1 pC/30 pC (low/high range)
Full scale ranges:	1 pA to 1µA, 10 pC to 10 µC, for absolute dosimetry according to IEC 60731: 1 nC - 10 µC
Leakage current:	< 0.5 pA in low range (1 nC - 100 nC), < 2 pA in high range (> 25 nC)
Polarizing voltage:	-400 V to +400 V
Time constant:	50 ms (both channels)
ADC:	14 bit (optimized gain control)
Calibration:	absolute calibrated on request
Trigger IN/OUT:	TTL, 9-pin male D-sub Connector
Communication:	RS232 to host computer
Dimensions:	390 mm (L) x 75 mm (W) x 360 mm (H)
Weight:	8 kg

Detectors*

Compact Chambers	Farmer Type Chambers	Plane parallel Chambers	Diode detectors
CC13-S	FC65-G FC65-P	PPC40 NACP	PFD ^{3G} Photon EFD ^{3G} Electron PFD ^{3G} Reference SFD Stereotactic

*Technical data in separate detector brochure

Technical data is subject to change without prior notice.

IBA activities in a nutshell

IBA delivers solutions of unprecedented precision in the fields of cancer diagnosis and therapy. The company also offers sterilization and ionization solutions to improve the hygiene and safety of everyday life.

Diagnostics

IBA has unique expertise in the design of cyclotrons and in the production and distribution of radiopharmaceutical tracers which are used every day in hospitals to quickly and accurately detect cancer, neurological and cardiac diseases. IBA also offers dosimetry products used in many hospitals for quality assurance in X-Ray diagnosis and for patient-dose monitoring

Therapy

IBA has developed Radiotherapy solutions and dosimetry equipment to treat cancer with the greatest accuracy. IBA is the undisputed leader in Particle Therapy, acknowledged to be the most precise and effective clinical radiotherapy method in the selective destruction of cancer cells.

Sterilization & Ionization

IBA designs electron accelerators and high power X-Ray solutions used in many industries to sterilize medical devices, to cold pasteurize food products and to improve polymer properties. Over 250 IBA Industrial accelerators are used in the world today, some for more than 40 years.

IBA a Belgian company, is listed on the paneuropean stock exchange EURONEXT and its Annual Reports can be downloaded on the Website: www.iba-group.com.

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The IBA logo consists of a stylized lowercase 'i' with a dot above it, followed by the lowercase letters 'ba' in a cursive, handwritten-style font.