

# Blue Phantom<sup>2</sup>



myQA  Accept\*



## Beam Commissioning and Annual QA

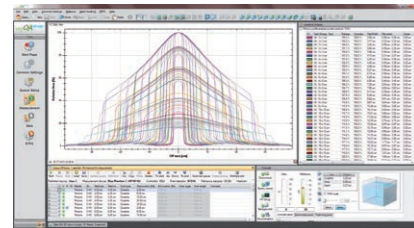
**Fastest, Most Accurate and Most Reliable  
Relative Dosimetry.**

# Relative Dosimetry: Fastest, most Accurate and most Reliable

# Based on more than 40 years of experience: The GOLD STANDARD – Blue Phantom<sup>2</sup>

For **MORE THAN 40 YEARS** IBA Dosimetry has been providing high quality dosimetry equipment and services, with more than **4,000 SATISFIED WATER PHANTOM USERS** worldwide.

The new Blue Phantom<sup>2</sup> embodies decades of **expertise, research and experience** in the development and clinical use of water phantom systems.



**myQA Accept\***

- Benchmark your data in the cloud and use scans as test results or individual reference in your Machine QA



### Adaptive Scan Optimization (ASO)

- Speed as well as Accuracy!
- ASO significantly speeds up continuous and step-by-step scanning
- ASO overcomes the restrictions of all other systems that compromise speed vs. high resolution scanning
- Automatic scanning speed adaptation enables optimal accuracy for the different profile segments. Fast scanning where fewer data points are needed



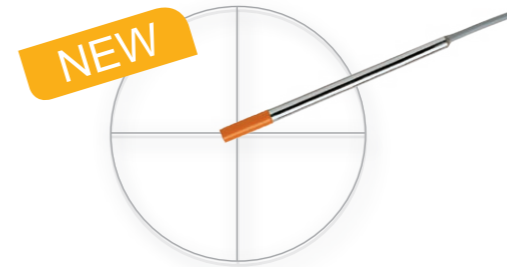
### Certified accuracy

- Uncompromised commissioning accuracy for your advanced IMRT, IGRT and rotational treatments
- The Blue Phantom<sup>2</sup> is calibrated and certified to guarantee high accuracy and reproducibility of min ± 0.1mm!
- Have full trust in your beam profile data!



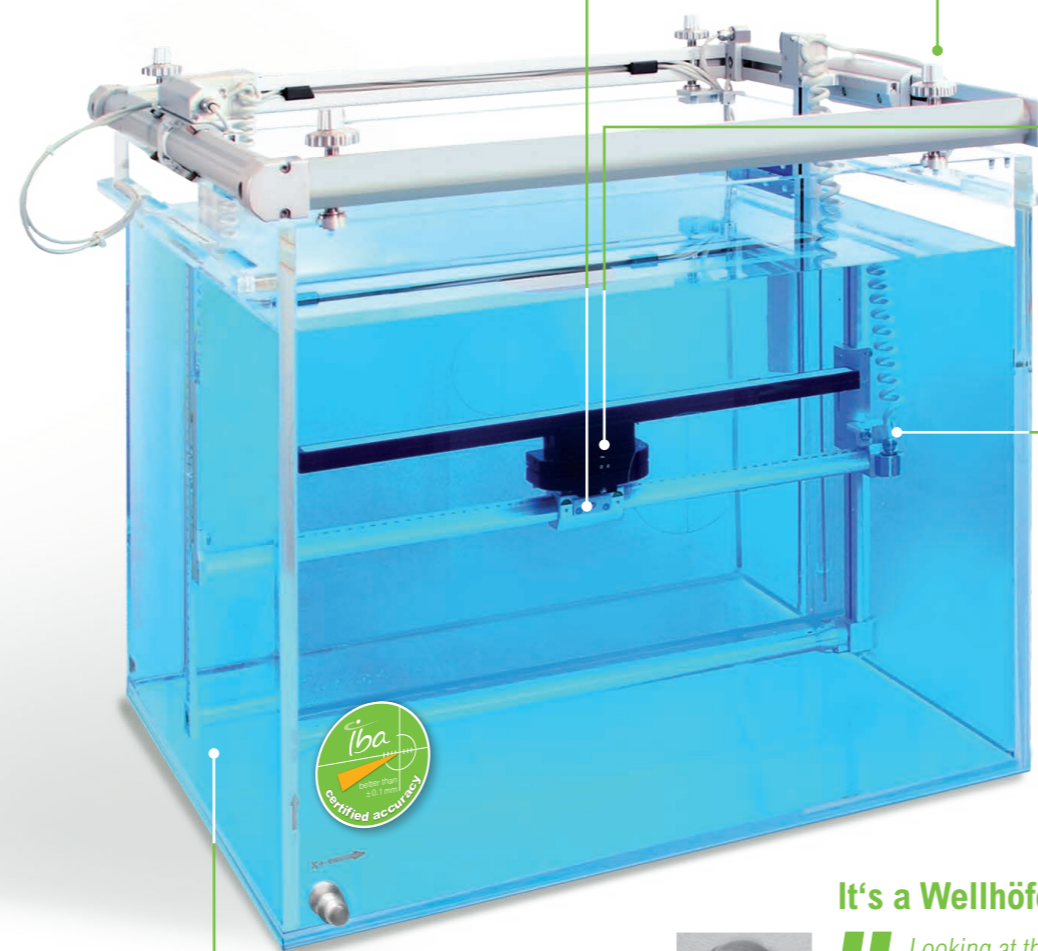
### StealthChamber™ for Small Field Dosimetry

- “Beam invisible” reference signal chamber
- Unique efficiency, uncompromised accuracy



### RAZOR Detector for Small Field Dosimetry

- High performance diode detector
- Small field measurements for photon and electron beams



### Fast & accurate setup with confidence

The micro-leveling technology allows for accurate alignment of the system to the water surface in just 2 minutes!

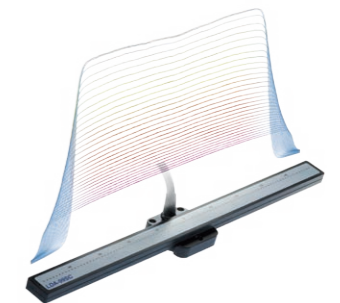
- Faster and more accurate than automated setup
- Avoids redundancy of validation needs of automated procedures
- No tank movement, no wave building



### 5 times faster data scanning

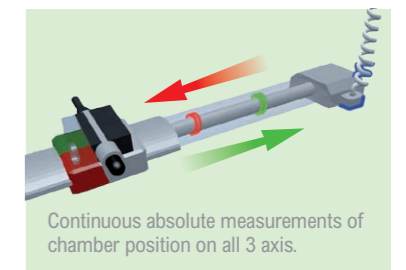
Dramatically cut your commissioning times with the Linear Diode Array:

- Complete profile scanning at once
- High resolution down to 0.5 mm



### High positioning accuracy

- Absolute measurements
- Contact-less sensors in water phantoms
- High detector positioning accuracy without mechanical wear!



The Blue Phantom<sup>2</sup> is equipped with a high-precision sensor technology. The superior solution is a non-contact absolute position sensor (vs. typical indirect stepper motor measurements).

**IBA AquaBlue:**  
water treatment for protecting mechanical parts and saving water from decay

### It's a Wellhöfer!



“ Looking at this new series of the Blue Phantom, I am happy to see a continuous and significant progress in accuracy, flexibility, long term mechanical stability and reliability since Wellhöfer Dosimetry started developing and producing water phantoms more than 40 years ago. Take advantage of experience, knowhow and consequent innovation by having a Blue Phantom<sup>2</sup>. ”

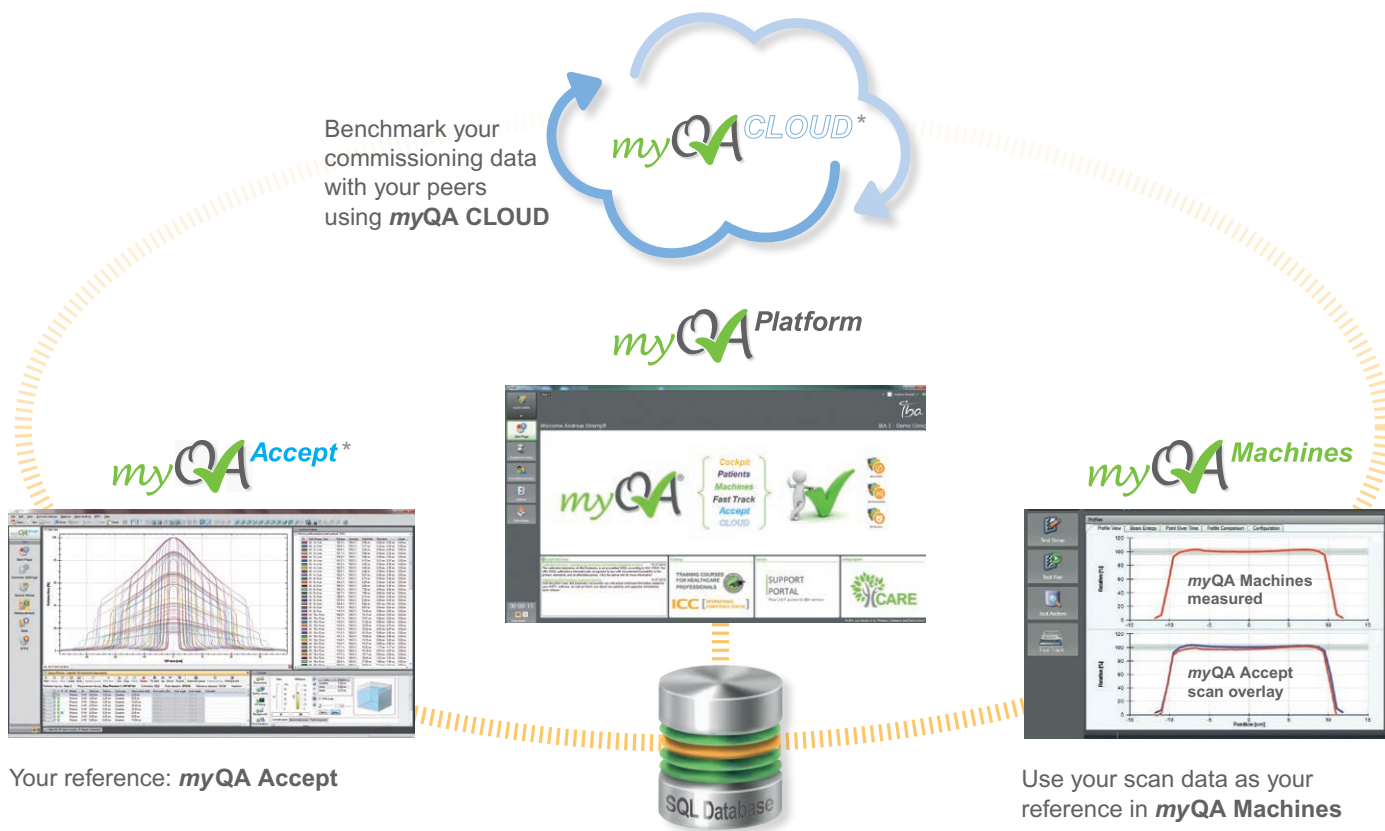
**MANFRED WELLHÖFER**  
Predecessor of IBA Dosimetry, Inventor of Water Phantoms

\* myQA Accept is not available for Sale; Release planned for mid-2015



# Join myQA now and get connected!

Connect your myQA Accept software to the myQA Platform, benchmark your data in the cloud and use scans as test results or individual reference in your myQA Machines.



**Join iON now!**  
IBA OWNERS NETWORK

- ✓ 24/7 global support
- ✓ Unique service portal
- ✓ Free ICC training

\* myQA Accept and myQA CLOUD are not available for Sale; Release planned for mid-2015

# Fastest, most Accurate and most Reliable Beam Commissioning and Annual QA



## Interactive micro-leveling system

- For most efficient and user validated setup of the phantoms

## Single hand control increases efficiency

- For easy and intuitive control of the Blue Phantom² and water reservoir



## Most accurate and most reliable

Blue Phantom²: the right solution for your crucial Linac commissioning

## CCU (Common Control Unit)

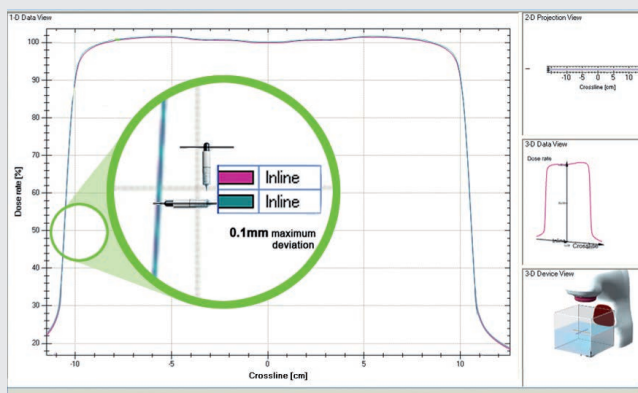
Its compact design integrates a controller and two independent electrometers:

- Simultaneous support of diodes and ionization chambers
- Built-in pressure & temperature sensor interfaces prepared for automatic Kt,p correction



## Consistently accurate measurements in x and y

Small ionization chambers like IBA's CC-13 ensure scanning direction independent accuracy, regardless of detector movement and orientation (according to TG-106 report).



In-plane and cross-plane scanning consistency of Blue Phantom² with CC-13 chamber

Find more online at [iba-dosimetry.com](http://iba-dosimetry.com)!

# TECHNICAL SPECIFICATION



## Blue Phantom<sup>2</sup>

<b>Exterior water tank dimensions (LxWxH):</b>	675 mm x 645 mm x 560 mm
<b>Scanning volume (LxWxH):</b>	480 mm x 480 mm x 410 mm
<b>Position resolution:</b>	0.1 mm
<b>Position accuracy:</b>	± 0.1 mm
<b>Position reproducibility:</b>	± 0.1 mm
<b>Speed:</b>	Positioning Speed: max. 50 mm/s; Scanning Speed: max. 25 mm/s
<b>Approximate volume:</b>	200 l
<b>Wall thickness / material:</b>	15 mm / acrylic
<b>Weight (empty):</b>	45 kg

## Common Control Unit (CCU)

<b>Maximum resolution:</b>	0.5 fA at 0.4 nA full scale; 5 fA at 40 nA full scale; 0.5 pA at 4 uA full scale
<b>Full scale range:</b>	0.4 nA / 40 nA / 4uA
<b>Leakage current:</b>	< 200 fA, typically <20 fA
<b>Time constant:</b>	20 ms
<b>Bias voltage range:</b>	± 50 through ± 500 V
<b>Trigger interface:</b>	RS 485 (custom specific)
<b>Common interface:</b>	ETHERNET (100BaseT)
<b>Main supply:</b>	100 – 240 V AC ± 10 %; 50/60 Hz

## LDA-99SC

<b>Number of diodes:</b>	99
<b>Diode spacing:</b>	5 mm (center-to-center)
<b>Diode specifications</b>	
<b>Type of silicon:</b>	Hi-pSi diode detectors
<b>Chip size:</b>	2.45 mm x 2.45 mm
<b>Diameter of active area:</b>	2.0 mm
<b>Sensitivity:</b>	35 gy/nC
<b>Effective measurement point:</b>	<1 mm
<b>Positioning in phantom:</b>	0, 45, 90 and 135 degrees

## emXX

<b>Number of channels:</b>	99+1
<b>Measurement mode:</b>	dose, dose rate, real-time, simultaneous measurements of all channels
<b>Characteristics (Dose/Dose rate)</b>	
<b>Input range:</b>	0 nA to 500 nA
<b>Accuracy:</b>	± 1 % for currents > 10 pA
<b>Resolution:</b>	100 fC (for charge values up to 0.2 mC)
<b>A/D converter:</b>	128 simultaneous working A/D converters
<b>Dimensions (LxWxH):</b>	320 mm x 265 mm x 70 mm
<b>Weight:</b>	3.75 kg

## Water Reservoirs

<b>Pump direction:</b>	bi-directional (HA05) / uni-directional (HA06)
<b>Tank volume:</b>	220 l
<b>Flow control:</b>	20 l/min
<b>Dimensions (LxWxH):</b>	970 mm x 660 mm x 830 mm
<b>Weight (empty):</b>	70 kg

## Lift Tables

<b>Operation:</b>	manual (HA01)/ electric (HA03)
<b>Vertical range:</b>	660 - 1020 mm / 660 - 1160 mm
<b>Vertical adjustable range (tilt):</b>	± 15 mm / 20 mm
<b>Horizontal adjustable range:</b>	- 15 mm in XY direction
<b>Rotation in XY plane:</b>	n.a. / ± 5°
<b>Table size:</b>	635 mm x 635 mm / 680 mm x 680 mm
<b>Dimensions (LxWxH):</b>	790 mm x 630 mm x 660 mm / 840 mm x 680 mm x 660 mm
<b>Weight (empty/full tank):</b>	69 kg / 116 kg

## TMR Set (requires Water Reservoir HA05)

<b>Scan length:</b>	30 cm
<b>Position reproducibility:</b>	± 0.3 mm
<b>Filling / draining speed:</b>	50 mm / min

## Minimum Computer Requirements

<b>Operating systems (US-English versions only):</b>	Windows® XP Professional, Service Pack 3, 32 bit Windows® Vista™ Ultimate, Service Pack 2, 32 bit Windows® 7 Enterprise, Service Pack 2, 32 bit and 64 bit
<b>Processor:</b>	Dual Core (or equivalent), 2 GHz or better
<b>RAM:</b>	2 GB of RAM
<b>Graphics card:</b>	DirectX 9c compatible, 256 MB video RAM, no shared memory
<b>Screen resolution:</b>	minimum 1280x1024 with 32 bit color
<b>Network:</b>	Ethernet (RJ-45) connection to connect controllers (e.g. CCU, emXX)
<b>Free space on harddisk:</b>	minimum 300 MB free disk space before installation and 80 MB after installation: For archiving of data, much more disk space is needed

Technical data is subject to change without prior notice.

Depicted product images and specifications may differ from the actual scope of delivery.

**MADE IN GERMANY.  
SUPPORTED GLOBALLY.**

[dosimetry-info@iba-group.com](mailto:dosimetry-info@iba-group.com)

### Europe, Middle East, Africa

IBA Dosimetry GmbH  
Bahnhofstr. 5  
90592 Schwarzenbruck, Germany  
Tel.: +49 9128 607 0  
Fax: +49 9128 607 10

### North America, Latin America

IBA Dosimetry America  
3150 Stage Post Drive, Suite 110  
Bartlett, TN 38133, USA  
Tel.: +1 901 386 2242  
Fax: +1 901 382 9453

### Asia Pacific

IBA Dosimetry Asia Pacific  
No.6, Xing Guang Er Jie Beijing  
OPTO-mechatronics  
Industrial Park (OIP),  
Tongzhou District  
Beijing 101111, China  
Tel.: +86 10 8080 9288  
Fax: +86 10 8080 9299

**DISCOVER MORE  
ONLINE**



[www.iba-dosimetry.com](http://www.iba-dosimetry.com)

[iba-dosimetry.com](http://iba-dosimetry.com)

Protect,  
enhance  
and save  
lives

iba

\* myQA Accept and myQA CLOUD are not available for Sale; Release planned for mid-2015