DOSIMETRY

MagicMaX Universal

Conformity-tested multimeter for acceptance and consistency tests

Life.
Science.

Innovative – flexible – fully integrated

The complete multimeter solution for all X-ray verification needs.

The MagicMaX Universal is your Beam QA solution for radiography/fluoroscopy, mammography, computed tomography, and dental imaging.

Its exchangeable detectors and chambers make the MagicMaX Universal quick and easy to set up for different kinds of measurements.

- Simple Plug & Play installation via USB using a laptop
- The user-friendly software takes only seconds to set up
- Readings are clearly displayed on the screen and can also be exported from the software for archiving
- MagicMaX can be fully integrated into your existing IT infrastructure and there is no need to purchase a separate display

1

MagicMaX Universal
Multimeter -Basic device

The basic device has 2 ports for plugging in the different detectors and 1 USB port for connecting it to a laptop.

2

MagicMaX Current Probe

For invasive and non-invasive tube current measurements.

- mA and mAs
- invasive or non-invasive mA/mAs measurement in one unit

3

MM-LS Illuminance meter

To check the illuminance of the light box or field in an X-ray system and to check the room class in relation to image reproduction systems.

- Lux measurement
- Triggerable measurement and continuous measurements
- V(λ) adjusted measurement

4

XR Multidetector

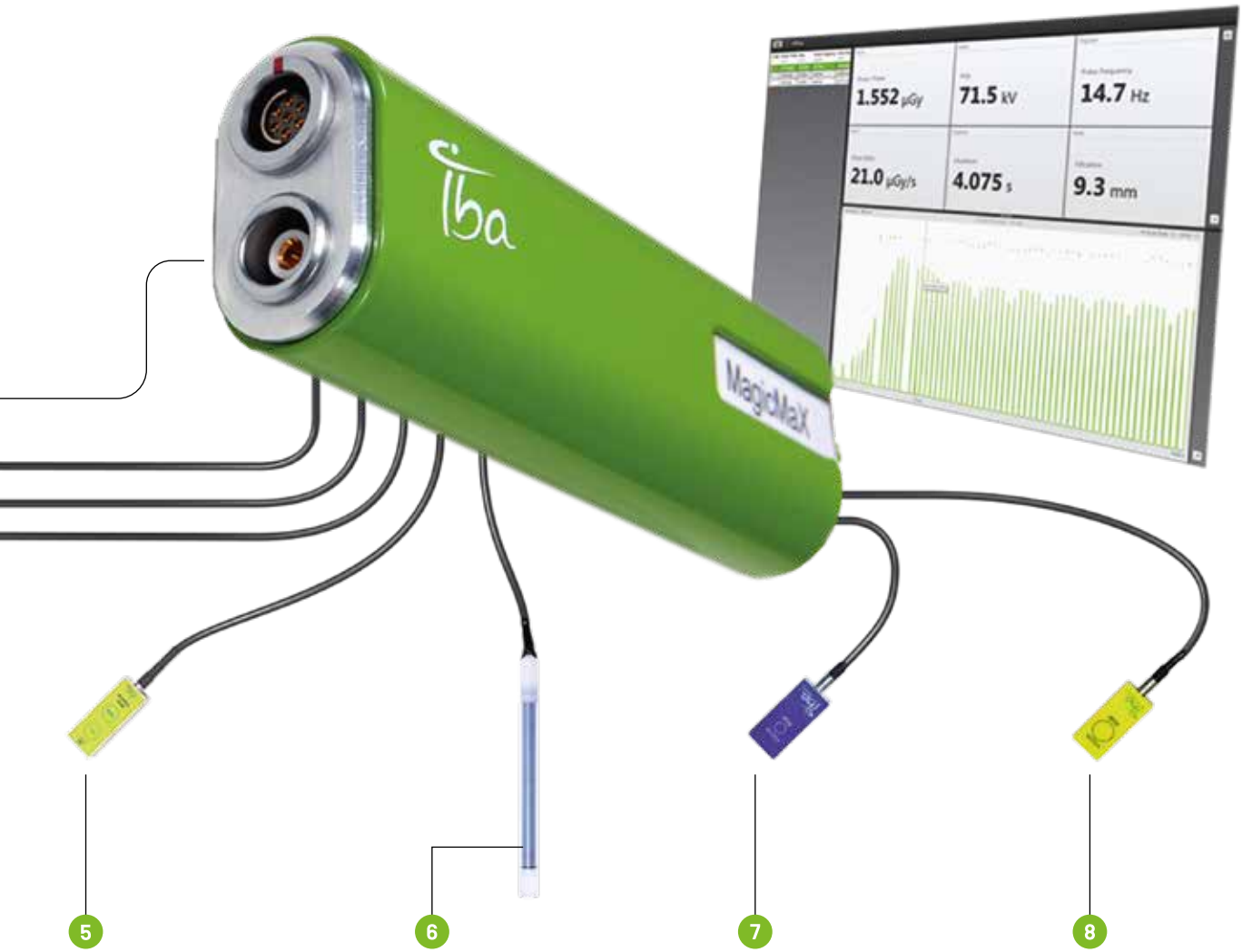
For measurements in radiography, fluoroscopy, and dentistry. Determination of several measurands with only one measurement:

- kVp, PPV, HVL
- Dose, dose rate, dose per pulse, irradiation time, waveform
- Optional declaration of conformity

MagicMaX clinical use

At our facility, we use the MagicMaX for both routine tasks and special measurements. We have found its flexible applications, reliability, and the availability of a wide range of beam parameters such as the waveform of radiation pulses to be particularly useful. MagicMaX has also proved to be very useful for training purposes.

Dr. M. Borowski
Medical Physicist at Klinikum Braunschweig, Germany



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XM Multidetector

For measurements in mammography. Determination of several measurands in a single measurement:

- kVp, PPV, HVL
- Dose, dose rate, dose per pulse, irradiation time, waveform
- Optional declaration of conformity

10XF-3CT Ionization Chamber

Ionization chamber for CT dose length product and dose measurements, as well as calculation of $CTDI_w$/$CTDI_{vol}$ – optionallywith declaration of conformity.

Solid State Detector RQA

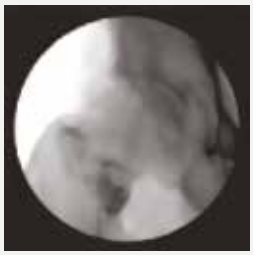
Dose semiconductor detector. For use as a second detector in radiography & fluoroscopy for entrance and exit dose measurements.

Solid State Detector RQM

Dose semiconductor detector. For use as a second detectorin mammography for entrance and exit dose measurements.

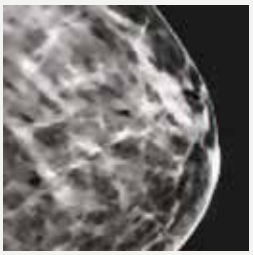
Conformity-tested multimeter solution

Radiography

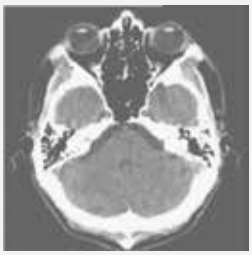


Fluoroscopy

Dental X-ray



Mammography



CT scan

Unique in terms of flexibility and mobility

The MagicMaX Universal is designed to provide one system for all applications. It includes different detectors and chambers that can be switched out extremely quickly.

The individual components enable you to customize your measuring system to your specific needs.

The system is flexible and allows measurement data to be read on a Windows laptop. This saves you from purchasing a separate display unit, and allows you to view, edit, and archive measurement results directly from your existing workstation.

- Automatic mode for fast setup (application automatically detected)
- Exchangeable detectors/chambers make it possible to measure all required beam qualities
- Supports additional sensors, e.g. light sensors
- Measurement results are analyzed directly on your laptop
- No additional hardware costs

All-in-one image

➔ All the data required for quality assurance is captured with one exposure, regardless of which X-ray device you use

Fast and thorough

➔ The software can provide a quick overview or detailed reporting

Plug & Play

➔ The system takes just a few seconds to get up and running and integrates seamlessly into the workflow

MagicMaX Universal – Setup and measurement in one minute!

youtube.com/user/ibadosimetry

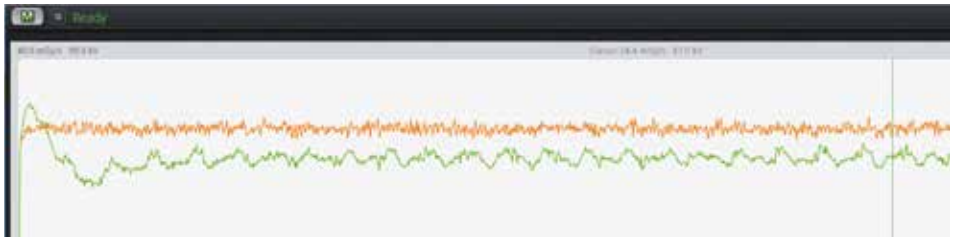
* (IEC 61674 & 61676)

MagicMaX Universal Measurement Software

The intuitively designed software allows for clear visualization of the measurement results, both graphically and in table format. You can choose which screen view you prefer.

- Customizable software to meet the user's needs
- Data export via Stream2Excel
- Compatible with Excel templates
- Option to reimport measurement results
- Storage function for future analyses
- License-free: can be installed on an unlimited number of computers
- Exported measurement data can also be forwarded and loaded on another computer, e.g. for remote diagnostics

1 Clear and detailed overview of all the measurement results in table format.



2 Interactive waveform view of dose rate, kV, mA and Lux.kV, mA and Lux.

System requirements:

- Operating system: Microsoft® Windows®
- Processor: Intel / Pentium (or similar) with at least 1.6 GHz
- Working memory: 1 GB RAM
- Hard disk space: 600 MB
- DirectX 9.29.1973 or higher
- Browser: Internet Explorer Version 6 or higher

Overview of measurement components

MagicMaX Universal basic device including case and analysis software

External input socket	LEMO triaxial connector and 7 pin connector
Interface	USB 2.0
Max. data rate	12 Mbit/s
Max. USB load	200 mA
Power supply	Via USB connector
Dimensions	100 mm × 30 mm × 20 mm
Weight	approx. 75 g
Start-up time	10 seconds
Waveform	Resolution = 0.1 ms, max. 300 s

XR multidetector for radiography and fluoroscopy, dental, and CT applications

Measured values	kVp, PPV, half-value layer (HVL), dose, dose rate, dose per pulse, exposure time and waveform.
Measuring ranges	Dose 55 µGy – 9999 mGy
Dose rate	100 nGy/s – 160 mGy/s

	Radiography/Fluoroscopy	CT
Range	40–150 kV	75–150 kV
Accuracy	≤ ±2% oder 0.7 kV	≤ ±2 % oder 0.7 kV
Total filtration	2–22 mm	2–22 mm
Dose	150 nGy – 50 Gy (≤ ±5 %)	
Dose rate	100 nGy/s – 160 mGy/s (≤ ±5 %)	
Dose per pulse	10 nGy/pulse – 50G y/pulse (≤ ±5%) at frequency of 1 – 1,000 and range of 1.0 ms – 300 s	

Current probe (mAs clamp)

For non-invasive mAs and mA measurements (X-ray tube current) directly on the X-ray high voltage (HV) cable. Also suitable for invasive measurements.

Measuring range	10 mA – 2 A / 0.1 mAs – 1000 As

MM-LS Illuminance meter

For measurements of illuminance (lux) in the vicinity of diagnostic monitors to determine the room class according to DIN 6868– 157 and on X-ray film viewers according to DIN 6856.

Measuring range	1 – 10,000 lx/(Class B according to DIN 5032–7.)

XM semiconductor detector for mammography

Measured values	kVp, PPV, half-value layer (HVL), dose, dose rate, dose per pulse, exposure time and waveform.
Measuring ranges	Dose 50 nGy – 50 Gy,
Dose rate	160 nGy/s – 160 mGy/s

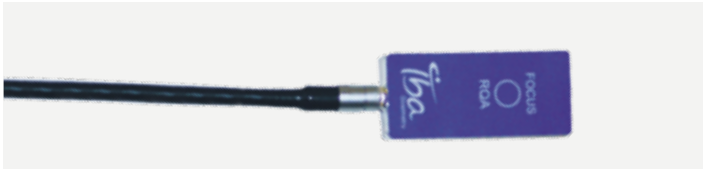
Anode/filter combinations

Combination	Tube	kV ±2 % or 0.7kV	HVL [mm Al] ±10 % or 0.05 mm
Mo/Mo	General	22–49	0.18–0.48
Mo/Rh	General	22–49	0.20–0.54
Mo/Mo	GE	22–48	0.18–0.48
Mo/Rh	GE	22–48	0.20–0.54
Rh/Rh	GE	25–48	0.30–0.72
W/Ag	General	21–38	0.18–0.77
W/Rh	General	21–38	0.18–0.67
W/Al	General	20–50	0.2–1.39

10XF-3CT Ionization Chamber for CT

Measuring ranges [RQT8 – RQT10; RQR8–RQR10; RQA8–RQA9]	Dose	0.032 mGy – 15 Gy
	Dose rate	0.32 mGy/s – 0.05 Gy/s
	Dose length product	0.32 mGy cm – 132 mGy cm
	Dose length product rate	3.2 mGy cm / s – 0.5 mGy cm/s
Active volume	$3\,cm^3$	
Total active length	100 mm	
Outer diameter	9 mm 12 mm with the PMMA adapter/protective cap	
Typical response capability	0.8203 nC/Gy	
Measured values	Dose length, dose length product rate, dose, dose rate, exposure time, waveform	

Reference conditions:
2.2 mm PMMA compression plate in the beam path for all measurements



RQA semiconductor detector for radiography, fluoroscopy, and dental imaging

For use as a double dosimeter for the MagicMaX Universal (in conjunction with XR detector), to determine the input and output dose.

Measured values	Dose/dose rate, time
Range	50 – 150 kV
Dose	55 µGy – 9999 mGy

RQM semiconductor detector for mammography

For use as a double dosimeter for the MagicMaX Universal (in conjunction with XM detector), to determine the input and output dose.

Measured values	Dose/dose rate, time
Range	25–35 kV
Dose	500 nGy – 9999 mGy

Outstanding solutions for quality assurance

Life, Science.

IBA Dosimetry has been your partner in complete diagnostic imaging quality assurance solutions for over 45 years. Our innovations focus on:

- Ensuring the best possible image quality for optimal diagnosis and treatment planning
- Minimizing the radiation dose
- Providing complete quality control solutions with training courses, services, and 24/7 customer support

IBA Dosimetry in numbers

- 10,000 satisfied customers
- 4,000 diagnostic products handled by the IBA Dosimetry service department each year
- 600 MagicMaX customers in the clinical and industrial sector

BEAM QA

IMAGE QA

DISPLAY QA

PATIENT DOSE QA

Quick and easy service and calibration at your fingertips!

IBA's Secondary Standard Dosimetry Laboratory (SSDL) is available to calibrate your dosimeters. This step is recommended before using the MagicMaX Universal multimeter to calibrate your devices. We provide our services in accordance with the highest global standards.

- Fast shipping and quick delivery
- Safety for you through one-stop calibration and verification

SSDL
[SECONDARY STANDARD DOSIMETRY LABORATORY]

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