For X-ray QA and Service

Barracuda

Everything you'll ask for

- All in One, All at Once
- Auto Compensation
- Enhanced Graphical PDA Display
- R&F, Mammo, CT, and Dental
- Ionization Chambers
- Bluetooth for PC and PDA
- mAs and Light Probes
- Fits in the Palm of Your Hand

Innovative X-ray QA Solutions ...of Course!

RTI

Unique

The Barracuda is an "all-in-one" X-ray multimeter for QA. With its multi-purpose detector it can measure on all modalities; R/F, mammography, fluoroscopy, pulsed fluoroscopy, dental, panoramic dental and CT systems. The Barracuda is accurate and easy to use. Auto Compensation ensures that data is accurate and no manual corrections of measured kVp and dose readings are required. The Barracuda is compact, the setup time is short, and it is easily transported in its carrying case.

Specifications

Rad/Flu/Dent/CT

Range	Inaccuracy
35 – 155 kVp	±1.5 %
0.1 ms – 2000 s	±1 % or ±0.5 ms
1 – 65535 pulses	±1 pulse
30 nGy – 1000 Gy	±5 %
4 µR – 100 kR	±5 %
15 nGy/s – 450 mGy/s	±5 % or ±7 nGy/s
1.7 µR/s – 50 R/s	±5 % or ±0.8 µR/s
0.1 mR/min – 3000 R/min	±5 % or ±0.05 mR/min
1.5 – 38 mm Al Total Filtr.	±10 % or ±0.3 mm
1.2 – 14 mm Al HVL	±10 % or ±0.2 mm

Mammography

Range	Inaccuracy
18 – 49 kVp (Mo/Mo)	±0.7 kV
0.1 ms – 2000 s	±1 % or ±0.5 ms
1 – 65535 pulses	±1 pulse
70 nGy – 2000 Gy	±5 %
8 µR – 200 kR	±5 %
15 nGy/s – 750 mGy/s	±5 % or ±0.04 µGy/s
17 µR/s – 86 R/s	±5 % or ±4 µR/s
1 mR/min – 5100 R/min	±5 % or ±0.3 mR/min

Calibrations for beam qualities:
Mo/Mo, Mo/Rh, Rh/Rh, Rh/Al, W/Al, W/Rh, W/Ag

Multi-Purpose Detector

The Multi-Purpose Detector (MPD) is a dedicated detector for the Barracuda system. It can be used for all modalities – from mammography at 18 kVp to conventional radiography or CT. The MPD measures the following parameters: kVp, time, dose, dose rate, dose/pulse, pulse rate, total filtration (with one exposure), HVL (with one exposure), kV and dose rate waveforms. Even for small C-arm units the kVp can be measured reliably, due to the MPD's sensitivity.

Barracuda

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A Flexible Arrangement

Barracuda is a modular system and can be configured in many different ways. A number of add-on probes are available, for example: mAs probes, ionization chambers, dose detectors and light detector.

The Barracuda can be configured to meet each user's specific need and requirements. It is easily upgradeable when the needs increase and new technology becomes available. The cabinet can house up to six different modules.

If additional probes are used, the required electrometer module can be easily added in minutes.

Modular System – EMM

The Barracuda can be equipped with one or several electrometer modules (EMMs). Measuring charge and current from a probe. The calibration factor for the detector or probe is used to calculate the measured value, for example dose and dose rate.

Five different electrometer modules are available, two without bias and three with bias.

Scatter and Leakage

EMM–BiasB and EMM–BiasW are ideal for ion chambers, which can also, optionally, be used with the bias on a banana jack. The EMM–BiasW has a wide measuring range and the high sensitivity of 1 nGy/s enables measurement also of scatter and leakage radiation.

Flexible when you need more

Barracuda has a modular design and will easily expand when your needs change. The cabinet can house up to six different application modules.

Barracuda grows with you

Palm ...

The Barracuda uses a graphical display to show measured data. Both measured values and waveforms instantly appear after each exposure. Up to six measured values and three waveforms can be shown at the same time. The graphical display also provides an intuitive user-interface that makes it very simple to setup the meter for different type of measurements. The display connects via Bluetooth or cable.

... or PC

The Barracuda can also be used with the powerful oRTIgo PC software for QA and service work. oRTIgo is easy and intuitive. Measured data and waveforms are automat-cally collected, easily organized and stored.

The software has a large number of templates for different tests: accuracy, reproducibility, linearity, HVL, AEC, and much more. Pass/Fail criteria can be defined and reports can be generated and printed.

oRTIgo

Accessories

CT Dose Profiler

The rapid advancements in CT technology are placing new demands on methods and equipment used for quality assurance. The wide beam widths found in CT scanners with multiple beam apertures make it difficult to use existing CT dose ionization chambers to measure the total dose given to the patient. Using a standard 10 cm CT ionization chamber may result in inaccurate measurements due to underestimation of the dose profile for wide beams. The CT Dose Profiler was developed to solve this problem.

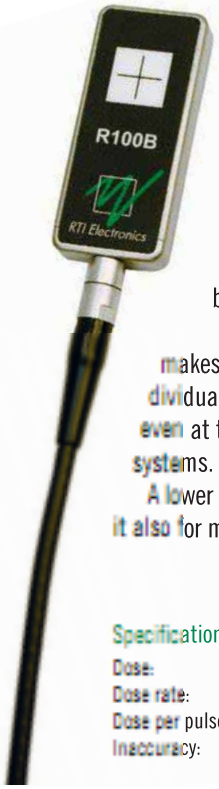
This new type of CT probe has a very thin detector chip. The detector is completely irradiated when the table is moving and the CT beam scans over the probe. The dose is measured in every point of the X-ray beam and the total dose profile is acquired regardless of how wide the beam is. There is no limitation of the beam width.

With the CT Dose Profiler you can avoid more expensive methods that require both preparation before and read-out after each scan (like TLD and X-ray film). The CT Dose Profiler is also ideal for measuring point dose and dose rate in the CT beam.

Specifications:

Dose rate:	40 nGy/s–760 mGy/s, 0.26 mR/min–5200 R/min
Inaccuracy:	±5 % or ±10 nGy/s
Spatial resolution:	0.25 mm

R100B Dose Probe



The R100B dose detector is specially designed for very low dose rate measurements. The detector is small to minimize interference with the X-ray systems automatic exposure control. It does not require correction for temperature or pressure and needs no bias voltage.

The R100B dose detector is designed for low dose rate measurements when measuring the input dose to the image intensifier. It can be used for both continuous and pulsed fluoroscopy.

The R100B is small and has a fast response which makes it ideal for pulsed fluoroscopy. It can detect the individual pulses, determine pulse rate and show waveforms even at the highest pulse rates used on modern fluoroscopy systems.

A lower range of 1 nGy/s (0.4 mR/h) makes it possible to use it also for measurement of scattered and leakage radiation.

Specifications:

Dose:	0.1 nGy–1.5 kGy, 12 nR–170 kR
Dose rate:	1 nGy/s–76 mGy/s, 0.4 mR/h–31 kR/h
Dose per pulse:	1 nGy/pulse–1000 Gy/pulse
Inaccuracy:	±5 % or ±250 pGy/s

DCT10 Ion Chamber

The DCT10 is a rugged, cylindrical, pencil-shaped air ionization chamber with flat energy response, and long term stability. The DCT10 connects directly with the bias electrometer module.

Specifications:

Dose:	0.04 mGycm–35 MGycm, 0.45 mRcm–400 MRcm
Dose rate:	160 µGycm/s–7 kGycm/s, 18 mRcm/s–800 kRcm/s
Inaccuracy:	±5 % or 16 µGycm/s

Magna 1cc

The Magna 1cc mammography ionization chamber with its excellent energy response is ideal for reference dosimetry. It connects directly with the bias electrometer module.

Specifications:

Dose:	150 µGy –at least 2 MGy, 17 mR– at least 200 MR
Dose rate:	5 µGy/s –250 Gy/s, 35 mR/min–1500 kR/min
Inaccuracy:	±5 % or 500 nGy/s

MAS-1B

The Barracuda invasive MAS-1B Probe can be used to measure tube current both for fluoroscopy and radiography exposures. The probe has a built-in low-pass filter with user-selectable bandwidth of 5 or 500 Hz. The probe accepts a floating input range of ±90 V relative to ground.

Specifications:

Ranges: 0.001 mAs – 9999 mAs
0.1 mA – 3000 mA
Inaccuracy: ±1 % or ± 0.01 mA

MAS-2B Clamp

Used with the Barracuda, the MAS-2B provides a non-invasive way to measure tube current and mAs on X-ray equipment. The current probe is simply clamped onto the high voltage cable and is ready for measurements.

Specifications:

Ranges: 1.0 mAs – 9999 mAs
10 mA – 4000 mA
Inaccuracy: ±5 %

L100B Light Probe

The L100B is designed to comply with the needs for QA in modern X-ray departments. With a monitor and a lux adapter the Light Probe measures the brightness on monitors and film viewing boxes, and the ambient light in the room.

L100B has the same spectral response as the human eye. This makes it reliable for all different types of measurements, independent of the light source. The spectral response complies with the CIE curve.

Specifications:

Monitor, viewing box
Ranges: 0.03–72000 cd/m^2
Inaccuracy: ±5 % or 0.006 cd/m^2

Ambient light
Ranges: 0.01–24000 lx
Inaccuracy: ±5 % or 0.002 lx

Gadgets

An Extra Hand

HVL Stand, Panoramic Holder, and Extender makes the positioning of the Detectors very easy.

CT Phantom

Phantoms for dose measurements on CT scanners. Body Phantom with insert comes in a hard case with built-in trolley.

Adapters and Extension Cable

A various range of adapters and extension cables makes Barracuda connect with different types of ionization chambers.

A Safe Traveler

Makes your Barracuda safer and more practical when you work in the field. Two different size cases are available.

Aluminum Filter

Pieces of aluminum for measuring half value layers for Mam and Rad.

* Specifications in this folder may vary depending on choice of model.

Scandinavian Quality

RTI Electronics was founded in 1981 when several curious and enterprising students met at Chalmers University of Technology in Gothenburg, Sweden. They saw their vision grow into the beginning of RTI products – today world leading in X-ray QA and Service instrumentation.

There are many reasons why RTI Electronics has become a market leader. Besides fulfilling the highest user demands, products from RTI Electronics are known for cutting edge innovation. Other reasons include our engagement, our expertise accumulated over more than a quarter of a century, and our commitment to doing it right.

We are convinced that You will be satisfied with Your choice of product, and we would like to continue to grow – together with You.

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