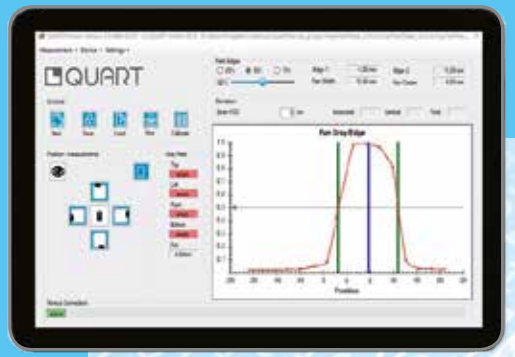
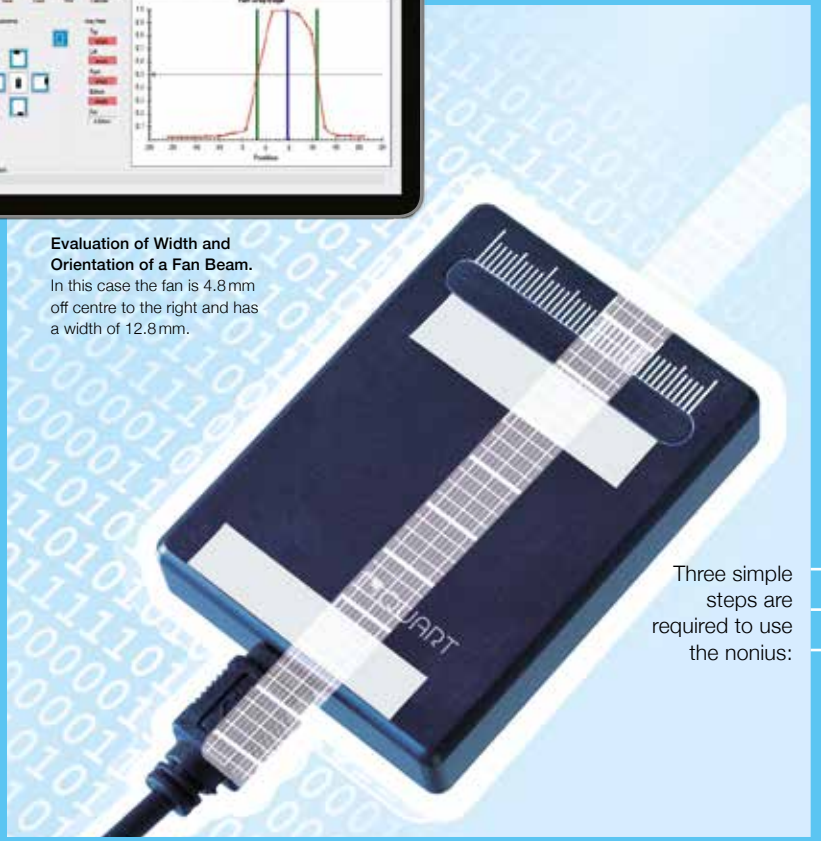
QUART nonius

Digital X-Ray Ruler

QUART
Quality Assurance in Radiological Technologies



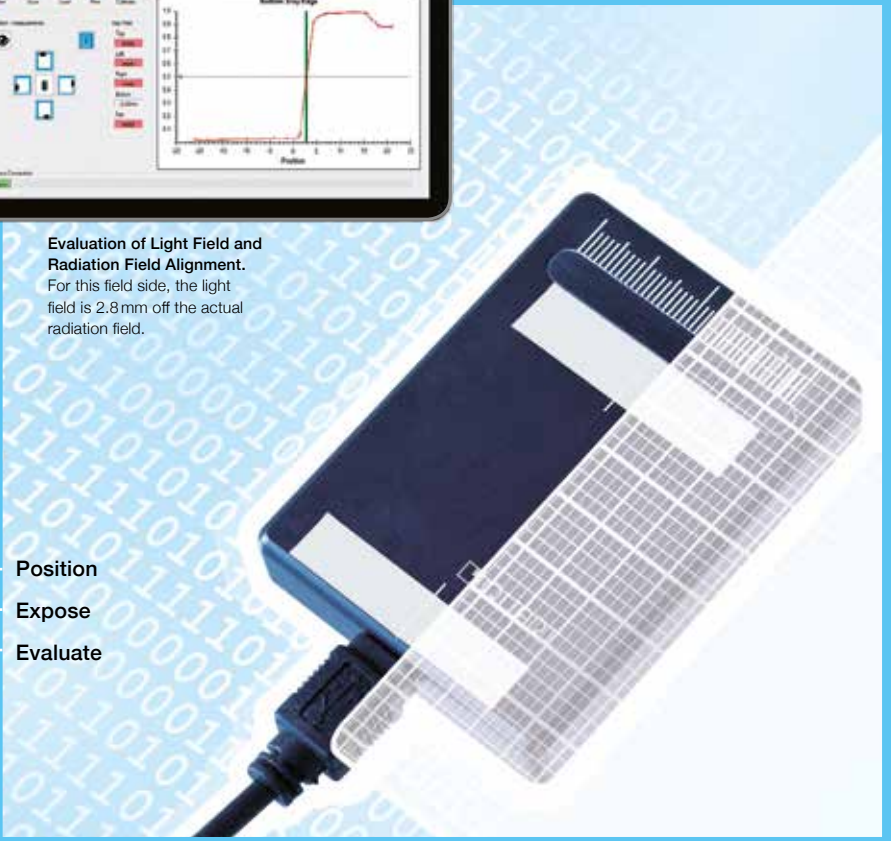
Evaluation of Width and Orientation of a Fan Beam.
In this case the fan is 4.8 mm off centre to the right and has a width of 12.8 mm.



Three simple steps are required to use the nonius:

1. **Position**
2. **Expose**
3. **Evaluate**

Evaluation of Light Field and Radiation Field Alignment.
For this field side, the light field is 2.8 mm off the actual radiation field.



X-Ray Field & Fan-Beam Measurement

Measurement Features
- **Alignment of Light Field and Radiation Field**
- **Alignment of Radiation Field and Detector**
- **X-Ray Field Geometry and Alignment**
- **Fan-Beam Geometry and Alignment**

The *QUART nonius* is a digital x-ray ruler for electronic measurement of geometric properties of x-ray fields. It can also be used to analyse characteristics of fanned x-ray beams.
The nonius analyses how the light visor matches the actual x-ray field. In addition, it checks the position, width and the dose profile of fanned x-ray beams.

The ruler can be used in digital as well as conventional x-ray modalities. Its precision is an absolute strong point – it is accurate to the „nonius“ of 0.1mm.

Accessories
Delivery *includes* a **3-meter USB cable** and a compact **protective case**.

Options
- ***QUART bridge holder*** for quick and reliable positioning (also in vertical position)
- QUART intra-oral positioning aide

Mode of Operation
_ Connect the device via USB to a Laptop or Tablet PC with Windows® operating system.
_ Position the head unit at the required position.
_ Use the light field or a reference point for accurate positioning.
_ Trigger the QA/QC exposure.
_ Data is transferred to the PC in real time.
_ Results are displayed, visualised, calculated and stored for later reference.
_ Evaluate and manage the results on your laptop.
_ The multi-lingual nonius software provides a data-base function and protocol modality including optional soft- or hard-copy print.

QUART nonius with bridge holder ready for measurement at a mammography system

Technical Data

Accuracy / Resolution	+/- 0.1 mm
Exposure Threshold	Dose ≥ 200 µGy / Dose Rate ≥ 20 µGy/s
Sensor Area	40 mm Length (16 Active Sensor Elements)
Weight	190 g
Size of Head Unit	55 x 75 x 15 mm (W x H x D)

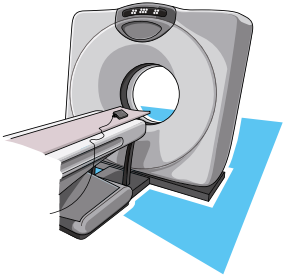
Plug & Play Component

Additional Hardware	Windows® laptop or tablet required
Connectivity	USB (2.0)
Operating System	Windows® 7–10

X-Ray Field Profile Evaluation

Fan-Beam Profile Evaluation

Fan-Beam Applications



Computed Tomography

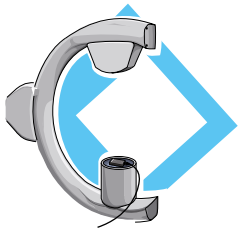
To evaluate width and dose profiles of a CT fan-beam, the device is positioned on the patient table towards the rotational direction of the scanner. One pass is sufficient to adequately assess the fan parameters such as width and orientation.

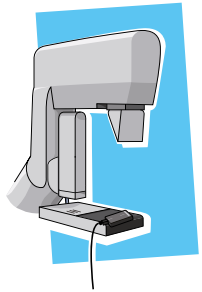
The serial mode enables the verification of moving fan modalities.

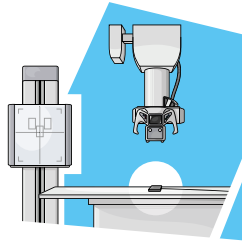
Dental Panoramic

To assess the properties of fanned beams as used at dental panoramic units, directly position the device above the secondary aperture or directly on the digital detector. In addition to information on the position of the beam, both the width of the fan-beam plus its dose profile are evaluated.

X-Ray Field Applications







CBCT / 3D

Modern diagnostic Cone-Beam installations sometimes do not show any detector markings which can make calibration of such equipment a challenge. The nonius will not only detect the edges of the CBCT field. It will also also show the edge profile and calculate the total deviation according IEC requirement.

Intraoral

To accurately assess field properties of intraoral equipment, a special holder is provided. Four exposures are required for a complete assessment. *nonius* will evaluate if the x-ray field is concentric orientated in the tube-shaped beam applicator.

Fluoroscopy

The *nonius* is highly sensitive. It can also be used to evaluate radiation fields of fluoroscopy equipment. Four exposures are required for a complete field analysis. The protocol function of the software makes documentation of test results very easy.

Mammography / DBT

At mammography installations the *nonius* is mainly used to check the field alignment towards the thorax wall side. The measuring precision exceeds the one acquired with standard phantoms or other tools. Depending on positioning, the dose rate profile within the radiation field (heel effect) can also be visualised.

DR / CR

For a comprehensive evaluation of x-ray field properties at radiography equipment (DR and CR systems), four exposures are required. Depending on positioning, inaccurate x-ray field alignment is detected and visualised. The protocol function of the software makes documentation of test results very easy.

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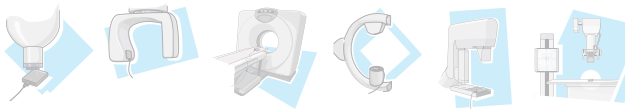

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