



3D X-RAY TOMOGRAPHY SYSTEMS



www.rx-solutions.com

Performance Made Easy

INDUSTRIAL COMPUTED TOMOGRAPHY HIGH PERFORMANCE X-RAY SYSTEMS

RX Solutions is 100% focused on X-ray imaging solutions. The aim at RX Solutions has always been to provide customers with the best X-ray and CT solutions, for inspecting and analyzing both external and internal features of parts.

RX Solutions designs, manufactures and supports one of the broadest range of high performance CT systems, from micro to nano scale analysis.

Innovative technology to reveal hidden structures of your parts

Innovation is at the core of our mission, whether it is for quality control, examination of a component or solving design issues. With an important investment in R&D, our team of experts and engineers are committed to serving different industrial & academic sectors and working in close collaboration with our customers to ensure highest levels of performance.



An expert by your side

With a continuous improvement approach, we aim to increase our customers' industrial productivity & development without compromising quality, reliability & safety.

Customer proximity means we integrate in our offer: training, maintenance, support and all the services that optimize the performance of our equipment within its applications. By closely cooperating with our global distribution partners, we give you easy access to our high-grade expertise and support.



Team of experts



Worldwide distribution



ISO 9001
quality
management



What's best with CT ?

X-Ray Computed Tomography
The most advanced technology for 3D Inspection

Virtual sample cut

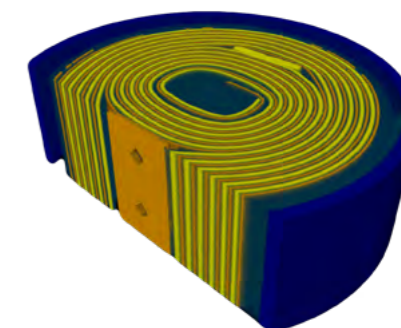
X-ray CT allows to virtually cut the scanned sample in any orientation for high resolution visualization and analysis of thin slices at any depth

One single scan - multiple data

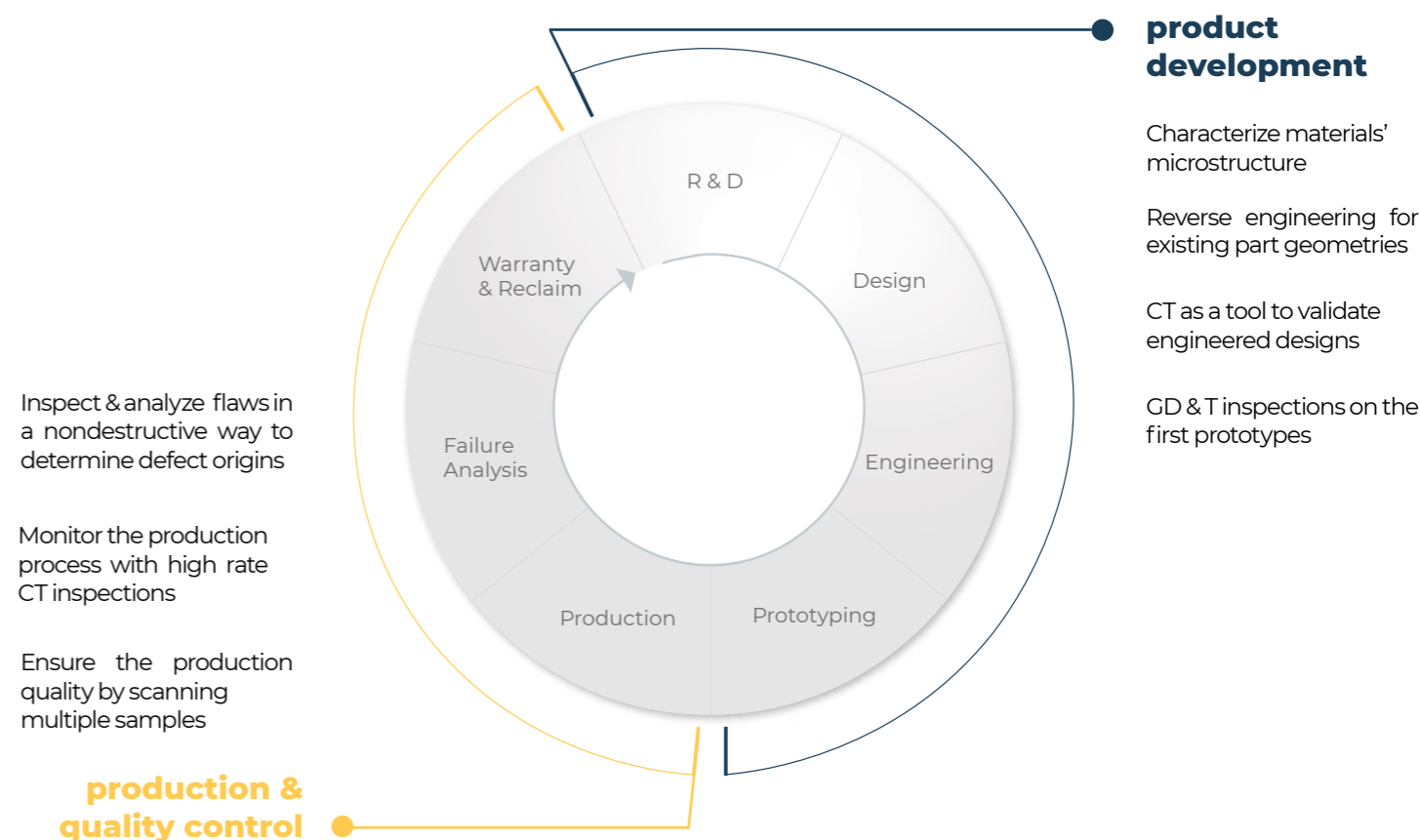
One scan allows multiple analyses to be performed: dimensional measurements, material characterization, defects analysis and inspections of inner structures in a non-destructive way

Inspect and reproduce any assembly

X-ray CT provides a detailed rendering of all the internal and external features. Point clouds representing the surfaces can be extracted allowing parts to be easily reproduced even when CAD models are no longer available



Computed Tomography at all stages of product life cycle



OUR EXPERTISE

REVEAL ALL DETAILS OF YOUR PARTS

Computed Tomography offers a significant advantage for various industries because of its ability to reveal hidden details of your parts. Getting a perfect insight of the invisible features of your parts allows you to capture, investigate, measure & analyze internal and external structures of your components in a nondestructive way.

RX Solutions offers complete and powerful X-ray CT systems with the finest level of detail: resolution down to sub-micron level, covering both industrial and academic applications.

CT systems portfolio covers a large scale of analysis, from Micro focus (4 μm) to Nano focus (0.4 μm) to satisfy a broad spectrum of applications.



High resolution



Low cost of ownership



High availability



Artefacts corrections



Scanning strategies



User friendly

Highly configurable CT systems

There is no need to compromise, RX Solutions has a solution for every application. The broad portfolio covers all sample sizes, and every application allowing multiple configurations with the most appropriate components:



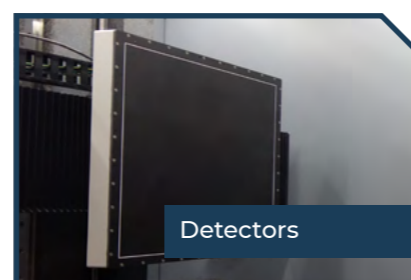
Multi axis mechanics

Micro and Nano mechanics with high grade honeycomb optical breadboards or granite base.



X-ray tube configuration

Variety of micro and nano focus tubes available. Dual-tube configuration available, to combine high power and high resolution.



Detectors

Large choice of flat panels and high resolution cameras.

EasyTom S



Compact. Medium size samples. Maximized uptime.

EasyTom



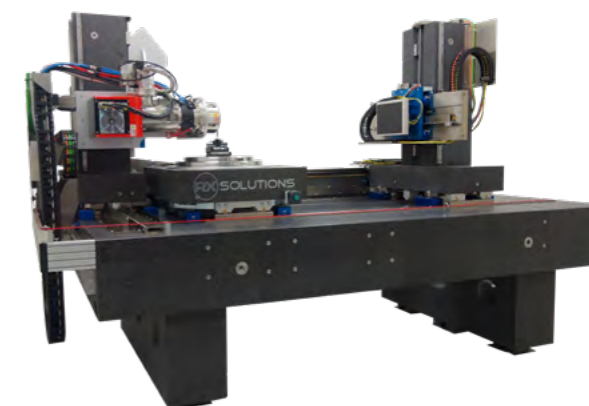
Flexible. Micro & Nano focus. Medium size samples.

EasyTom XL



Powerful. Step-in cabinet. Large size samples.

UltraTom



Lab CT system. Multi tubes & detectors configurations.

KEY FEATURES // HIGHLIGHTS

Extremely High Resolution

Outstanding CT resolution down to 0,4 μm
First class mechanics

Flexible solutions

Wide range of applications
Easy to use & maintain
Small footprint & easy integration

Automatic Object Positioning

High-grade manipulators
Up to 9-axes kinematics & live view

One scan, multiple inspections

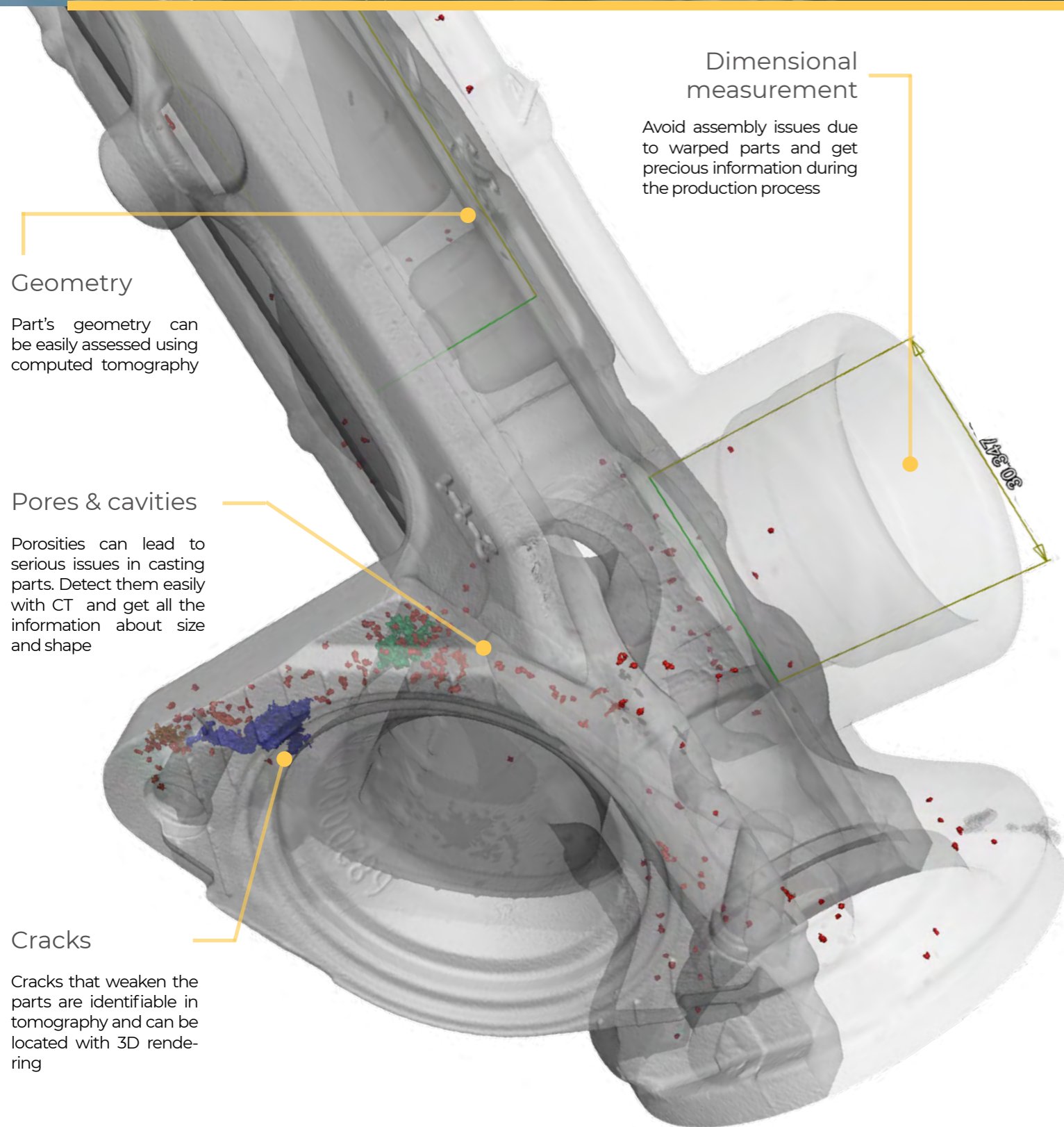
Material analysis
Geometry and Metrology

Lasting investment

Upgradable CT solutions
Reliable and proven CT equipment

Powerful & advanced software

Intuitive Acquisition & Reconstruction
Multiple scanning strategies



Material analysis

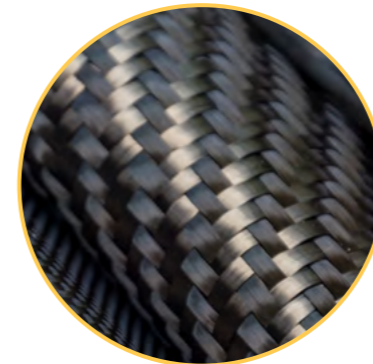
Micro structure analysis
Fiber Analysis
Welding characterization
Assembly inspection
Failure analysis

Geometry & Metrology

Wall - thickness analysis
Comparison
Reverse engineering

NANO technology

Explore beyond the limits
Ultimate CT performance in your lab

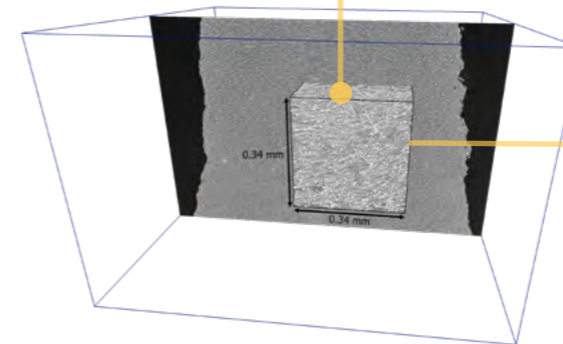


Nano-CT is a high resolution technology for 3D imaging at sub-micron resolution. The technical concept is based on a further development of micro-CT technology. By improving the spatial resolution, structures at a cellular level become visible.

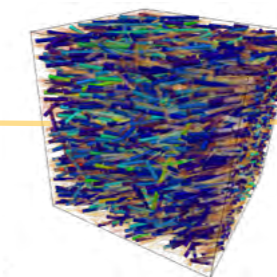


Nano-CT on a composite sample as follows :

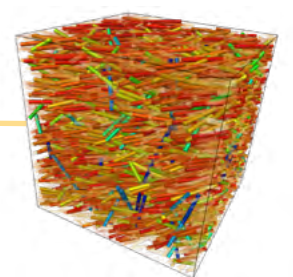
- resolution of 0.7 μm
- sub volume extraction also called ROI (Region of Interest)



Fibers scale extraction



Fiber length
color coding



Fiber orientation
color coding

Our focus industries



Additive
manufacturing



Aerospace



Automotive



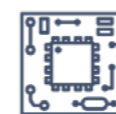
Arts & jewels



Composite



Defence



Electronics



Medical
& Dental



Injection
molding



Oil & gas



Plastics



Research
& Science

High flexibility & powerful CT system

The ultimate flexible system hosted in a shielded cabinet

An open and flexible system, hosted in a large shielded cabinet ideal for academic research and for industrial R&D applications. Its greatest asset, among many others, is the fact that it can be tailored to each test requirement. The space all-around the system enables easy access even to setup the most comprehensive in-situ CT experiments.

As a very powerful system, it has been designed to perfectly address the most challenging 3D applications ranging from material research to industrial applications in R&D, quality assurance and production.

Open design

Lab set-up customized for your applications: configurable detectors, high speed cameras.
Highly modular: high power & high resolution X-Ray sources with up to 3 X-ray tubes including nano-focus 160 kV & micro-focus 300 kV.

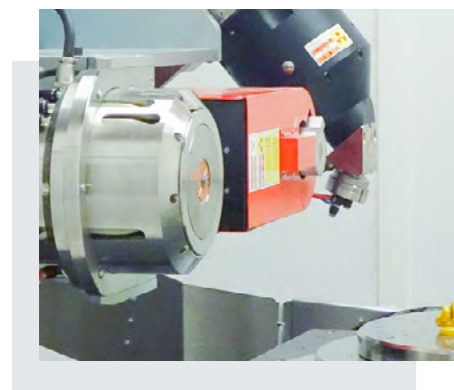
High resolution

Outstanding resolution down to 0.4 μm .
First-class mechanics: finest stability, high precision granite table, air bearing axes guarantee stiffness, high precision linear encoders.

Flexible solution

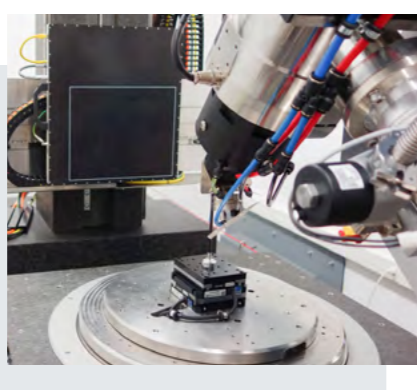
Large inspection volume with 9 mechanical axes (\varnothing 520 mm x 650 mm).
Scalable CT system.
Large space around the system for easy access to the setup.

Freely configurable Lab CT system



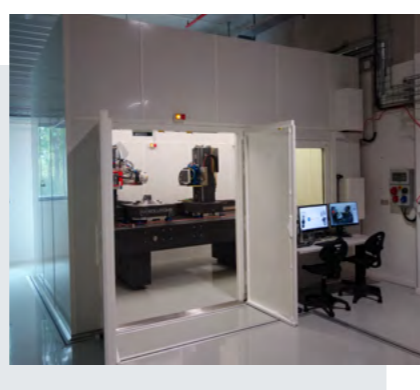
Micro & Nano focus tubes

High-resolution configurations of tubes up to a maximum of 300 kV guarantee a very high resolution and short scanning times



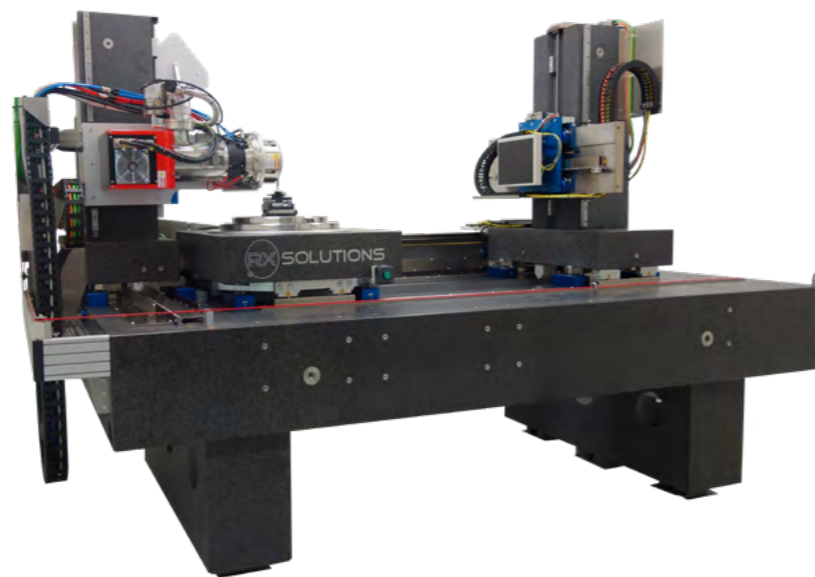
Lab solution design for In situ

Lab CT system that can be enhanced with In situ testing for dimensional measurements and material testing under specific test conditions



Scalable CT system

UltraTom can be upgraded at any moment with a large choice of tubes, flat panels and cameras

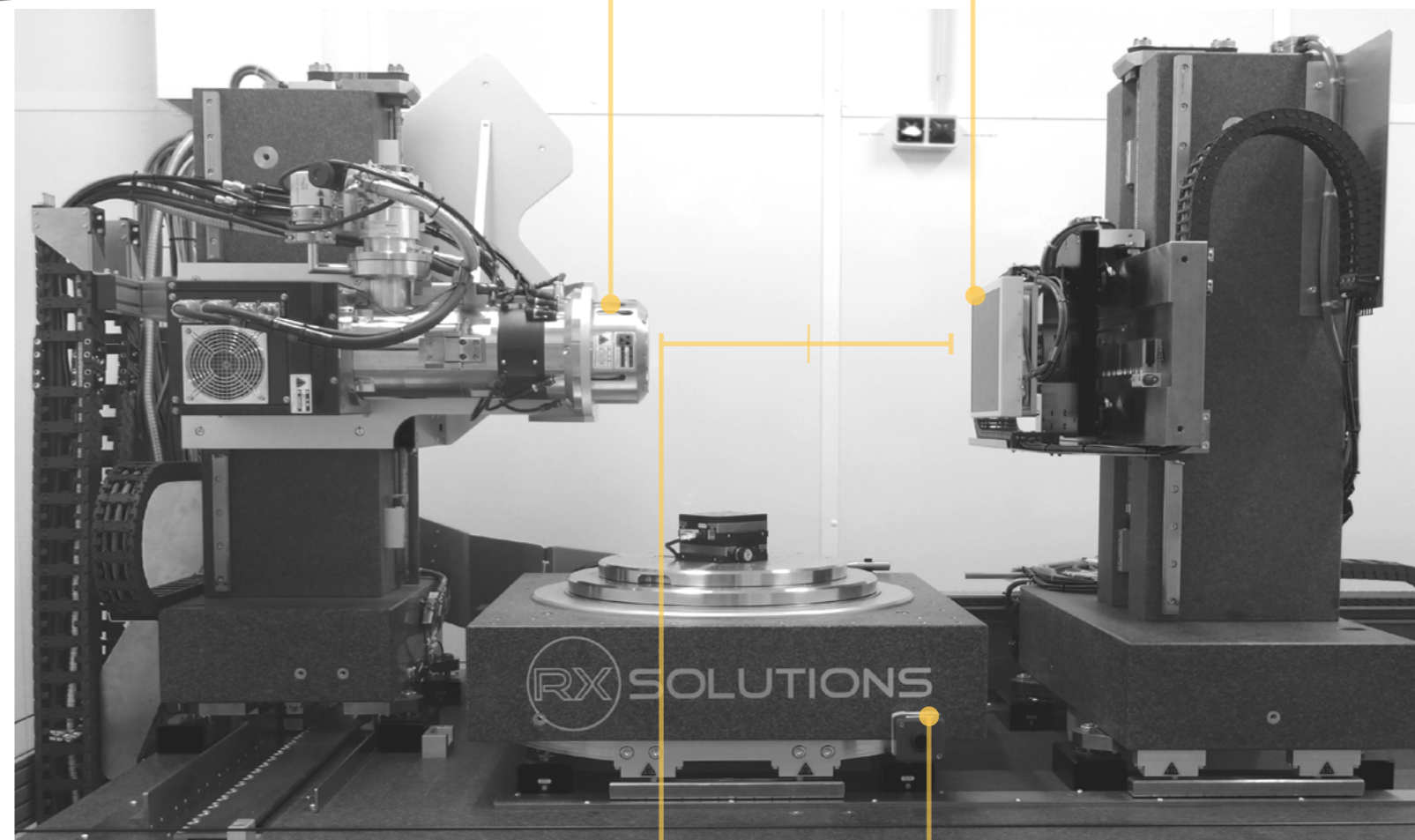


X-ray tubes

High-grade X-ray sources : up to 3 X-ray tubes including nano-focus 160 kV and micro-focus 300 kV, to ensure excellent material penetration.

X-ray detectors

Multiple choices of high resolution flat panels and cameras to get the best results for any sample coupled with a high-precision detector holder.



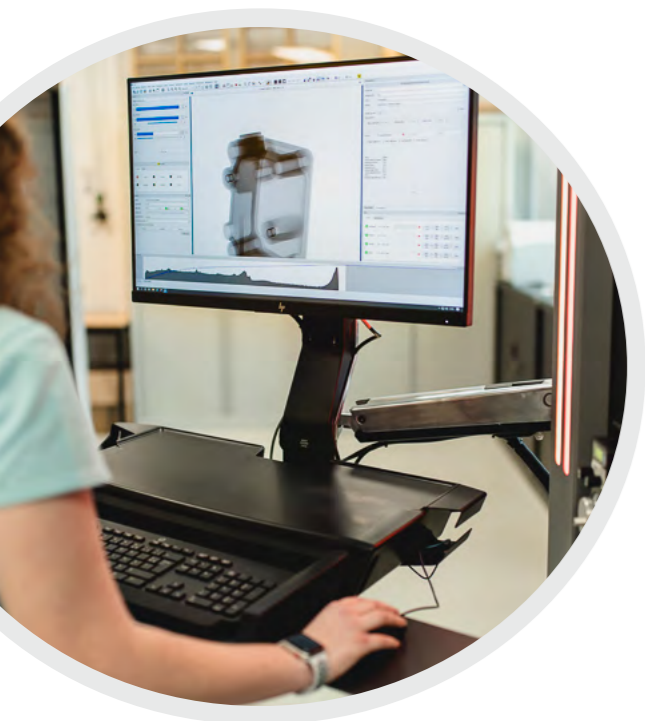
Tube to Detector distance

The distance between the tube and detector determines the available magnification range. With its large distance up to 1640 mm, UltraTom provides the magnification required to achieve the highest resolution for any sample size and scan configuration.

Precision axes

First-class multi axes mechanic with high-grade granite axes for long term stability. Heavy load. Motorized centering stage.

Inspection volume : \varnothing 520 mm & H 650 mm



Powerful, advanced & intuitive software

Everything is combined in a single X-ray software from the setup to the CT scan's 3D rendering

X-Act software integrates a complete interface to accurately inspect your samples.

This is an acquisition and reconstruction software that, as an advanced solution, integrates a large number of functionalities enabling optimized results for any sample.

Radiography

Live inspection

Radiography is quick and easy with X-Act. Software filters are included to improve sharpness and contrast. 3D measurements can be taken directly on the radio.

Acquisition

Data acquisition

The workpiece previously positioned in the equipment rotates through 360°. During this rotation, a set of radio projections are acquired at different angles.

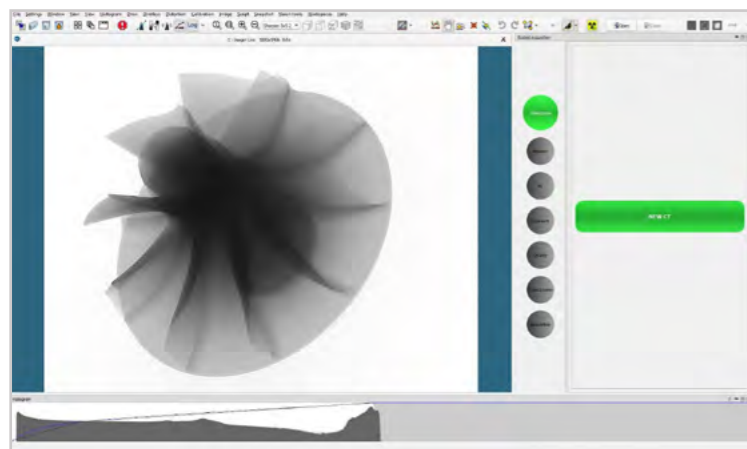
Reconstruction

Data processing

All the projections made during the acquisition step are reconstructed in a 3D volume. This will serve as the basis for the optional step: quantitative analysis.

Ease of use

thanks to X-Act guided acquisition & wizard modes



Guided acquisition mode is designed to configure the acquisition parameters step by step with the user and suggest the preferable settings values at each step.

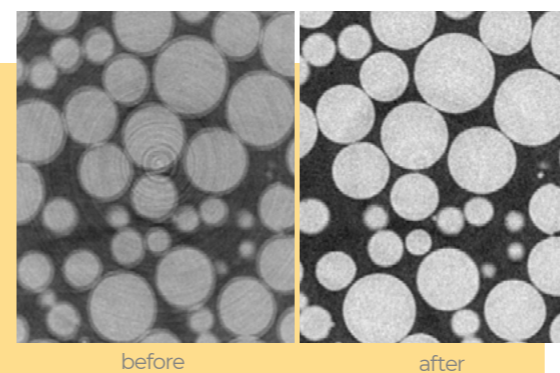
Wizard mode is a fully automatic acquisition tool. The user acts as supervisor and the complete acquisition process is defined and executed by the system.

Regardless of your expertise, you will obtain results of highest quality.

Multiple Scanning Strategies & Great Flexibility

X-Act is a powerful software with an easy and intuitive user interface. Delivered with an incredible number of functionalities, X-Act enables you to set the perfect parameters for the scanning process, for any kind of sample.

X-Act allows multiple scanning strategies, from conventional CT scan mode to multiple advanced acquisitions capabilities, such as helical, stack, shift, laminography, limited angles, Region of interest zooming, Dynamic 4D CT...



Advanced Artefact Corrections

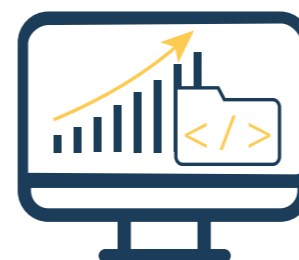
X-Act software suite by RX Solutions includes multiple artefacts compensations plugins that enhance CT scans:

Geometry, focal spot movement, phase contrast, ring artefact, beam hardening, metal artefacts and more

Automation, Macro & Scripting

These functions allow the programming of automatic scans when carrying out inspections of large series of samples.

They can drastically increase the throughput of your CT system and the overall productivity. Unique scripting capabilities allow you to extend or custom fit the system to your needs.



Continuous Improvement Strategy

Our team is continuously working to provide customers with the best X-Act experience by focusing on high-level image processing and tomographic reconstruction. X-Act is improved with innovations, especially developed to enhance capabilities, increase speed or release features the industry has never seen before.

Since the beginning, the flexible spirit behind X-Act has been kept, making this software a perfect CT tool for every application.

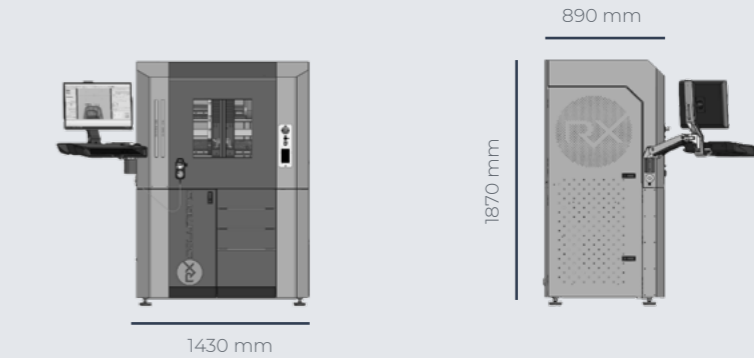
TECHNICAL SPECIFICATIONS

OUR PRODUCT PORTFOLIO FEATURES

| | Max kV | Max power | Types | Max resolution ¹ | EasyTom S | EasyTom | EasyTom XL | UltraTom |
|---|--|-----------------------------------|----------------|--------------------------------|-----------------------------------|----------------|----------------|-------------------------------------|
| X-ray tubes | Micro 110 | 16 W | Sealed | 2 µm | ● | | | |
| | Micro 130 | 39 W | Sealed | 5 µm | ● | ● | ● | ● |
| | Micro 150 | 75 W | Sealed | 5 µm | ● | ● | ● | ● |
| | Micro 230 | 200 W | Open | 2 µm / 4 µm | | ● | ● | ● |
| | Micro 300 | 300 W | Open | 4 µm | | | | ● |
| | Nano 160 | 16 W | Open | 0.4 µm | | ● | ● | ● |
| | Dual tube configuration | | | | | ● | ● | ● |
| ¹ JIMA chart resolution | | | | | | | | |
| Detectors ² | Type | Pixel matrix | Pixel pitch | Sizes | EasyTom S | EasyTom | EasyTom XL | UltraTom |
| | Flat Panel | 1920x1536 | 127 µm | 25 x 20 cm | ● | ● | ● | ● |
| | Flat Panel | 2048x2560 | 124 µm | 32 x 25 cm | ● | ● | ● | ● |
| | Flat Panel | 3072x3072 | 139 µm | 43 x 43 cm | | ● | ● | ● |
| | Camera | 4008x2672 | 9 µm | 36 x 24 mm | ● | ● | ● | ● |
| ² other detectors available on request | | | | | | | | |
| Mechanic | High-grade optical honeycomb breadboard table that ensures stability for micro-CT scans | | | | | ● | ● | |
| | Granite-base that ensures temperature stability and good damping properties | | | | ● | ● | ● | ● |
| | EasyTom S | | EasyTom | | EasyTom XL | | UltraTom | |
| Mechanic | | | Micro | Nano | Micro | Nano | Ultra | |
| N° of axes | 4 | 7 | 9 | | 7 | 9 | 9 | 9 |
| Max SDD ³ | 610 mm | 910 mm | 780 mm | | 1470 mm | 780 mm | 1100 mm | 1640 mm |
| Scan volume | Ø 180 x 380 mm (with 2520) Ø 230 x 380 mm (with 2532) | Ø 420 x 520 mm | Ø 220 x 350 mm | | Ø 600 x 720 mm | Ø 220 x 350 mm | Ø 520 x 650 mm | Ø 520 x 650 mm |
| Max sample weight | 5 kg | 30 kg | 20 kg | | 100 kg | 20 kg | 80 kg | 100 kg |
| General | | | | | | | | |
| Weight | 1020 kg | 3300 kg | 2500 kg | | 7000 kg | 5000 kg | 7400 kg | 7000 kg |
| External dim | 1345(W)x900(D) x1870(H) mm | 2200 (W) x 1100 (D) x 2000 (H) mm | | | 2800 (W) x 1850 (D) x 2400 (H) mm | | | 3230(W)x1420(D) x2520(H) mm |
| Radiation safety | High grade X-ray shielded cabinet (< 0.5 µSv / h at any place of the instrument surface) for integral protection | | | | | | | Placed in a shielded operation room |
| Software | All systems are controlled by RX Solutions X-Act software | | | | | | | |
| ³ Source to Detector Distance | | | | | | | | |

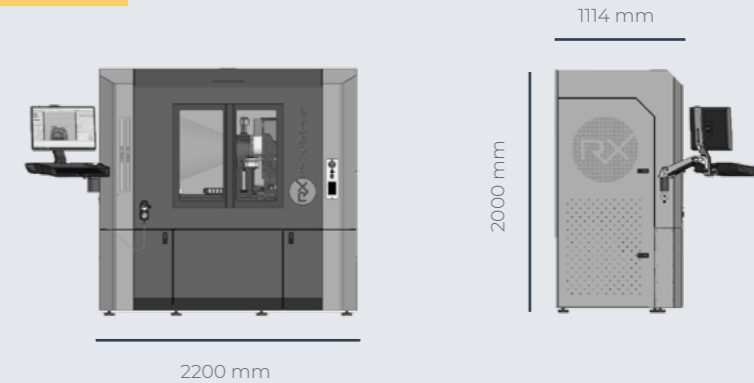
// EasyTom S

High Resolution Industrial CT System for Small / Medium Size Parts



// EasyTom

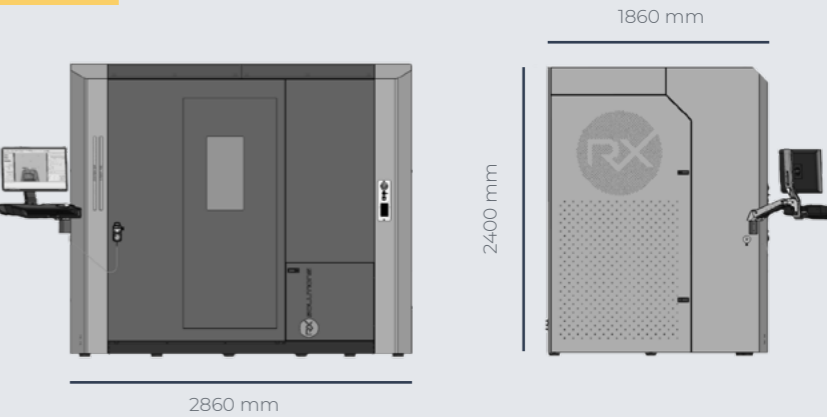
High Resolution Micro & Nano CT System for Medium Size Parts



// EasyTom XL

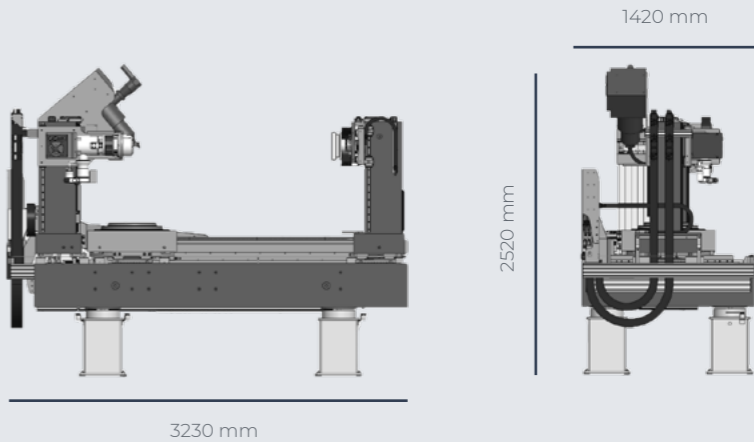
High Resolution Micro & Nano CT System for Large Size Parts

Very Large step-in cabinet



// UltraTom

Modular Design for a Highly Versatile X-ray Micro & Nano CT System





sales@rx-solutions.com
www.rx-solutions.com

24 Bis, rue Uranus, ZAC Altaïs
F-74650 Chavanod FRANCE
Tél. +33 (0)4 50 67 39 52



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