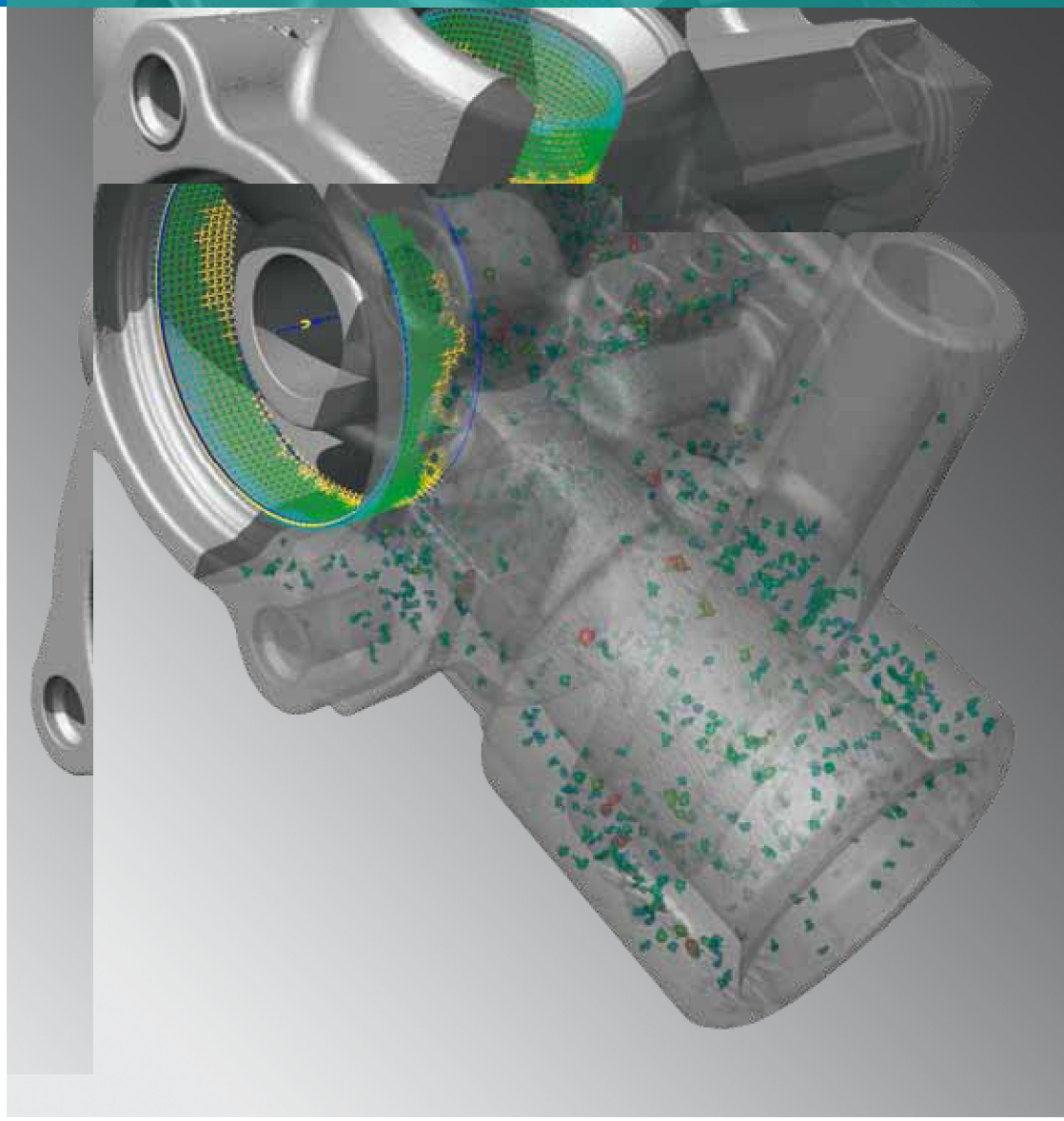
Y.CT Precision

High resolution cone-beam computed tomography (CT) inspection system for small to medium-sized parts

Discover the difference in accuracy



YXLON
Technology with Passion

Explore the art of detection

As a world leader in non-destructive X-ray testing YXLON has mastered the art of detection. Based on our long experience in designing tailor-made X-ray and CT solutions, we help our customers achieve excellent results during their scientific research and development projects as well as production inspection procedures. Making the invisible visible – that's what we call the art of detection.

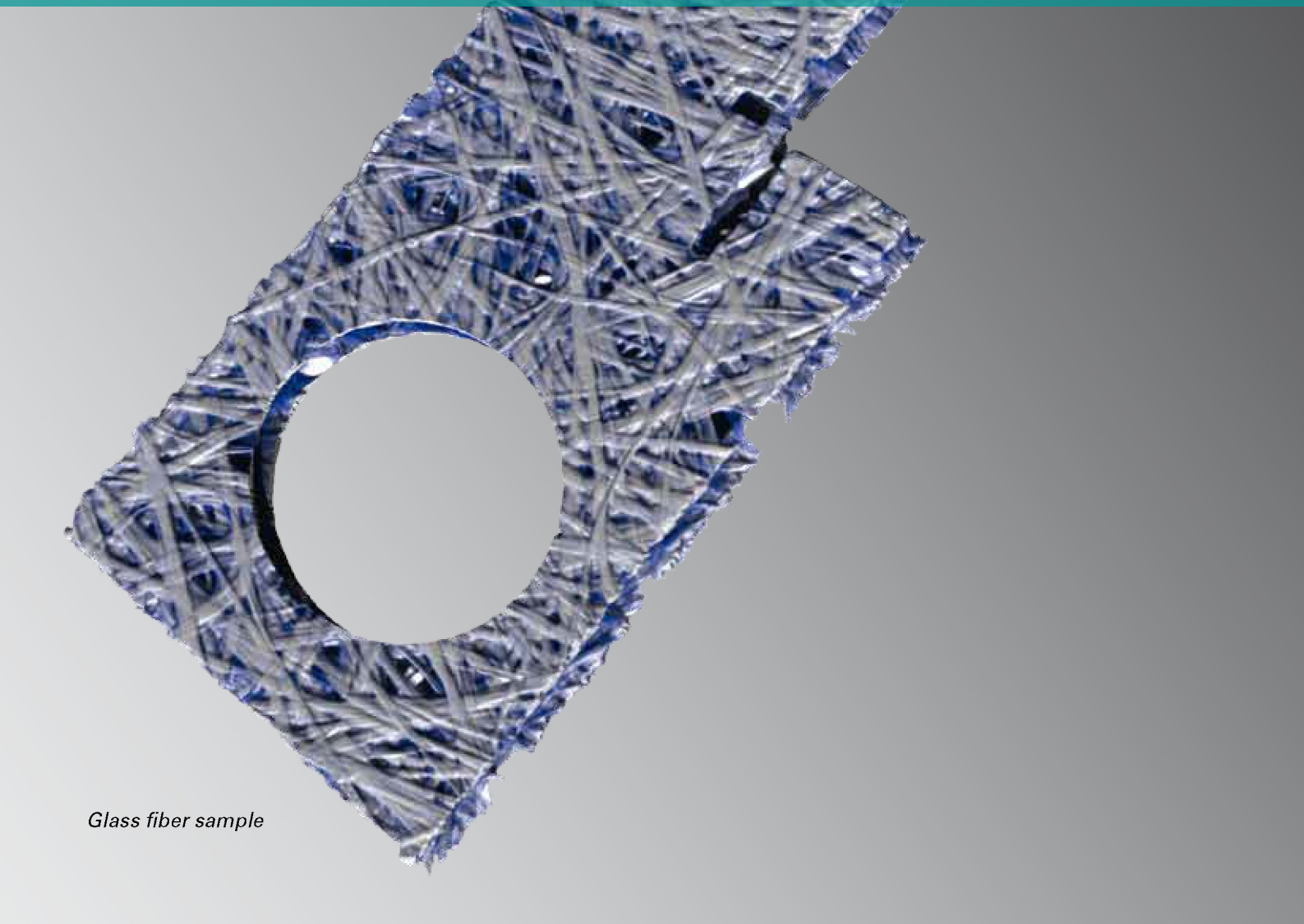
No matter what industry you're in, we provide you with reliable 3D components analyses and accurate dimensional measurements. Are you doing research in the field of geology, archeology or material science and engineering? Do you need to inspect cultural artifacts? YXLON's computed tomography (CT) excellence also supports you in your scientific and art-related testing.

Because YXLON CT solutions are tried and tested premium systems, they blend smoothly into your processes, guaranteeing a fast workflow and high uptime. Our CT product range equips you with relevant information regarding the interior and exterior structures of your items in one data set. This way, you reduce your inspection time, allowing you to concentrate on your core business.

Additionally, the worldwide YXLON service network is an important factor to be taken into account when evaluating the YXLON CT price-performance ratio – one that appeals to quality managers, operations personnel, and purchasers alike.

Where do you use YXLON CT systems?

- Analysis of porosities and inclusions
- Dimensional measurement
- Analysis of composite materials (carbon / glass fiber reinforced plastic)
- Assembly or structural analysis
- Wall thickness measurements
- Nominal / actual comparison
- Examination of historical art and archeological objects
- Investigation of geological samples



Glass fiber sample

Perform 3D inspections with premium detail recognition

Do you want to test small to medium-sized parts or large ones with lower density? Does a broad range of applications for research, development and quality assurance appeal to you? Choose the Y.CT Precision for maximum detail detection.

The new laminography technique precisely displays details which can't be distinguished in a 2D industrial X-ray image. Laminography can broaden your application range, i.e. you can easily X-ray non-rotatable large, flat parts like car doors and circuit boards – making laminography a perfect complement to regular CT.

The helical CT scan is another benefit that improves your testing procedures. By simultaneously rotating and moving the part vertically it eliminates the need for image stitching and provides supreme accuracy in all areas of tall parts.

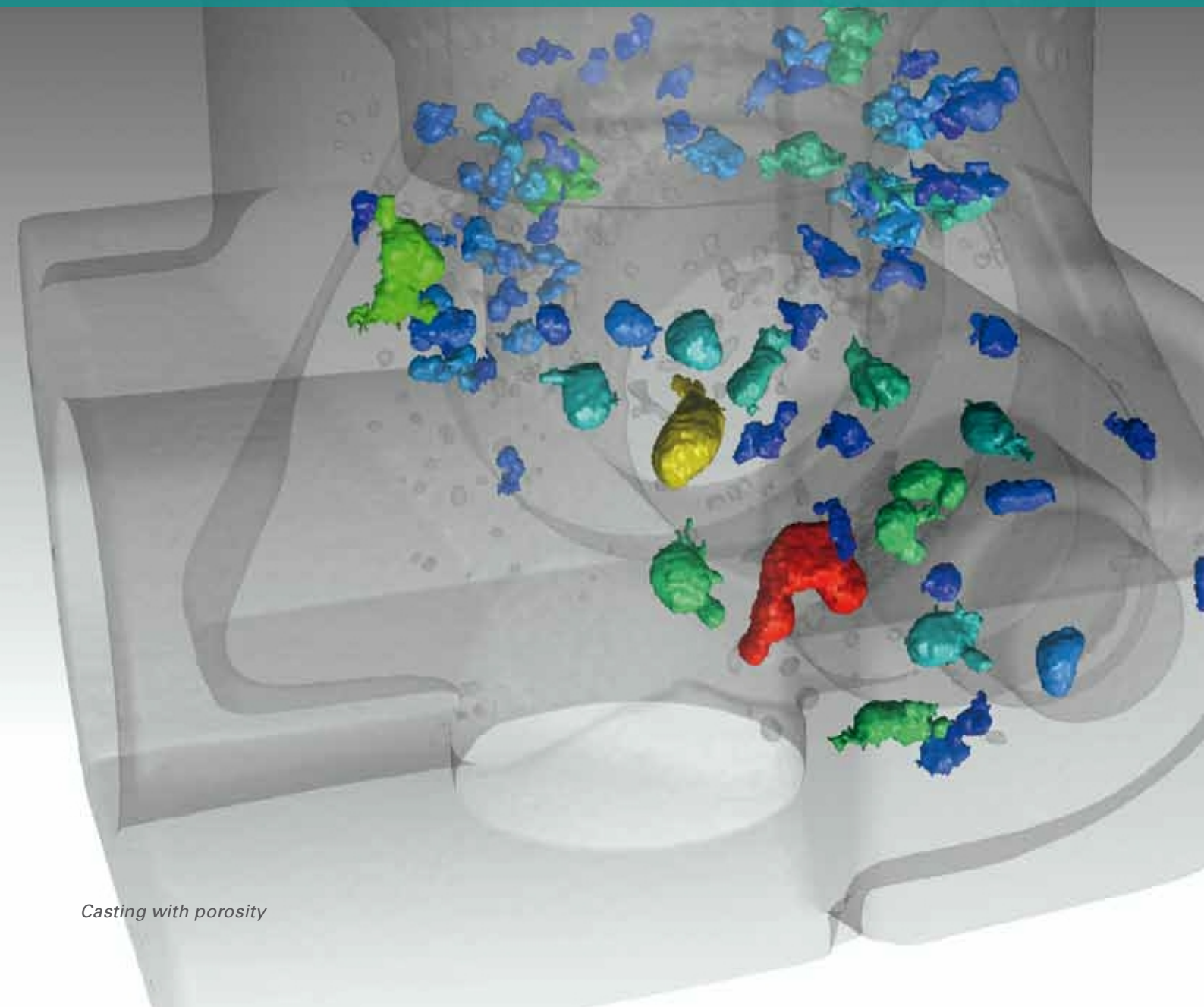
Y.CT Precision has more to offer to maintain excellent images allowing you to detect porosities and inclusions: YXLON's software tool box automatically reduces ring artifacts in your CT scans right at the source. You can also use various state-of-the-art reconstruction algorithms. Plus, the detector calibration process helps ensure consistent image quality.

Y.CT Precision key benefits

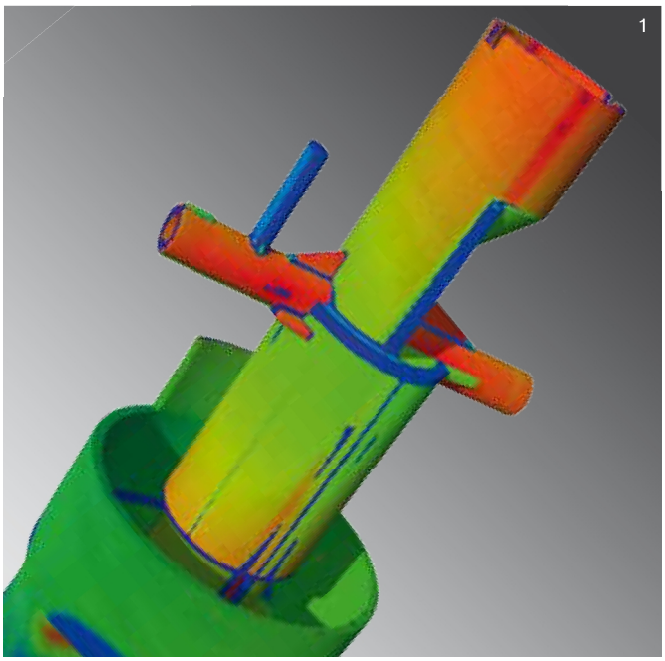
- Laminography to easily inspect large, flat parts like car doors
- Helical CT to avoid stitching and create homogenous images
- Intelligent image enhancement tool box for increased detail visibility
- Multiple parts tested in one inspection run to boost workflow

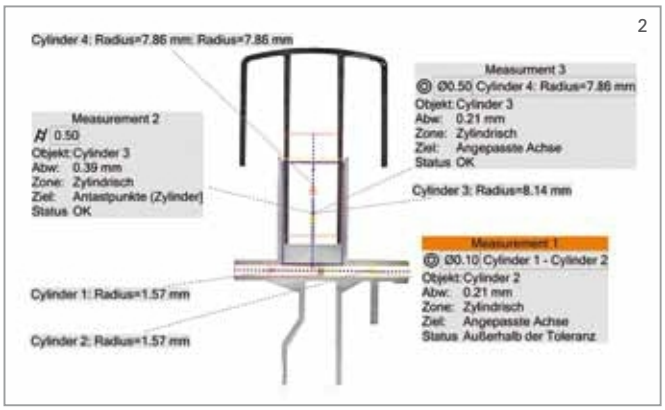
Detect what matters

The Y.CT Precision's microfocus tube allows superior detail recognition up to 4 µm – the perfect basis for reliable inspections in your facility.



Casting with porosity





1 Plastic injection molding
2 Dimensional measurement

Experience exact repeatability

Y.CT Precision is built to find the details assuring excellent inspection results. It has the capability for very strong magnification to create highly detailed images. The rock solid granite manipulator makes your system very precise, durable, warp-resistant and temperature-independent. Benefit also from the microfocus X-ray tube with its unlimited lifespan thanks to a replaceable filament and targets.

In terms of imaging, the system boasts a flat-panel detector specifically selected for your application requirements. Each detector contains YXLON's exclusive performance specifications to ensure a high quality standard.

Count on smooth workflow made possible by the multiple parts testing functionality where one test run can cover more than one item. Smart software solutions also enhance the inspection process. Automated center determination, beam hardening correction, and a vertical and horizontal field-of-view extension help provide full-scale volume within a few minutes.

Which items and materials are especially suitable for Y.CT Precision?

- Fiber-reinforced composites
- Plastic injection molded parts
- Mechatronic modules
- Small aluminum cast parts
- Small historical art and archeological objects
- Small geological samples

Maximize your uptime

What are your specific service requirements? We offer a wide range of service modules and packages tailored to your needs.

Our highly qualified global service team is committed to providing excellent service to our customers worldwide. With our eight global service centers and the specialized staff of our 50 service partners we always ensure a rapid response time wherever and whenever you need it.
Your benefits include:

- High system availability
- Low inspection costs per part
- Best inspection quality
- Continuous operational safety

We align our organization and all service activities to comply with your requirements. With our innovative and modular service solutions you can count on true added value throughout the entire life cycle of your system.

We support you in limiting your CT inspection costs to a minimum. At the same time, your systems operate safely while obtaining optimum inspection results.

YXLON Life Cycle Service – more than the best image

- **Y.ServicePass** – increase your system availability
- **Y.WarrantyPass** – keep your costs predictable with an extended warranty
- **Y.SpareParts** – operate your system at peak performance with YXLON spares
- **Y.Upgrades** – keep your system state of the art
- **Y.Academy** – have your operators trained

Check out these facts and figures

System principles	Y.CT Precision
Inspection modes	Cone-beam CT, Helical CT, Laminography
Manipulation	7 axes, granite based

X-ray components

Tube	Y.FXE 225.48	Detector	YXLON XRD 1620 / XRD 1621[1]
Maximum energy	225 kV	Active area	400 mm x 400 mm
Maximum power	~ 320 W[2]	Pixel pitch	200 µm
Focal spot	≤ 4 µm[3]	Pixel matrix	2048 x 2048
TXI	yes[2]	Frame rate	3.75 fps - 7 fps / 15 fps - 30 fps

1) Selected detectors acc. to specific YXLON pixel specification - ASTM E2597 compliant
2) TXI = True X-ray Indicator - controls real output dose for constant intensity
3) Acc. JIMA wire visibility at minimum focus size

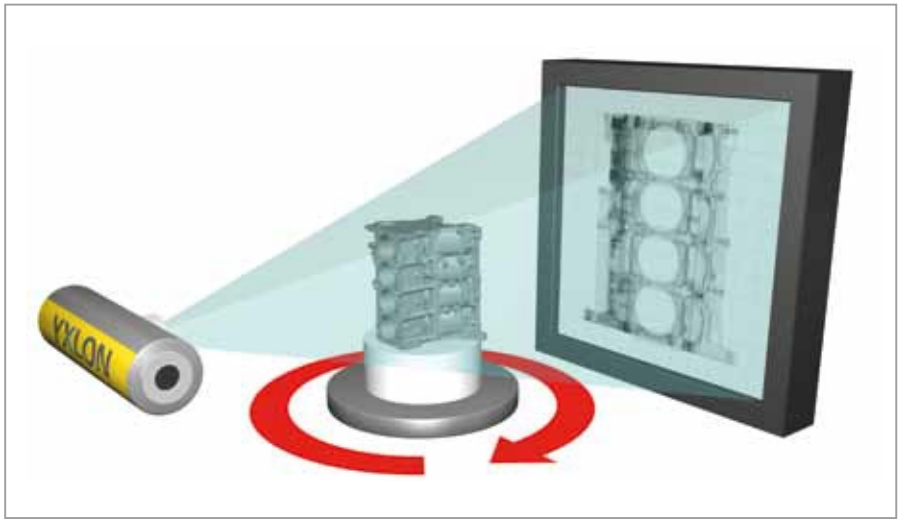
Inspection item	
Maximum part size (Ø x h)	600 mm x 1.250 mm
Maximum part weight	50 kg

CT parameters	
Maximum magnification	~ 210
Minimum voxel size[4]	~ 950 nm
CT field of view - standard (Ø x h, approx.)	330 mm x 330 mm
CT field of view - extended (Ø x h, approx.)	540 mm x 800 mm

Enclosure / System	
Enclosure size (W x H x D)	4,300 mm x 2,300 mm x 2,800 mm
CT system weight, approx.	6,300 kg
Enclosure weight, approx.	8,000 kg

4) Calculated by dividing the detector pixel size by the maximum geometric magnification

Typical values for standard system design. Customization may affect these values. Other configurations on request.



Principle of cone-beam CT: The 3D model comprises all information acquired by the detector during the rotation.

Find the system that suits you best

	Y.CT Compact	Y.CT Precision	Y.CT Modular
Part size	+	++	+++
Material density	+ +	+	+++
Part weight	+	+	++
Detail visibility	++	+++	+++
2D (digital radioscopy)	N/A	✓	✓
Laminography	N/A	✓	✓
Helical scan	N/A	✓	✓

Would you like to learn more about our systems? Interested in a test inspection? Please contact us by phone or e-mail. We look forward to hearing from you.

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