

# Y.CT Compact

Fan-beam computed tomography (CT) inspection system  
for high-density medium and large-sized parts

Discover the difference in efficiency



# 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

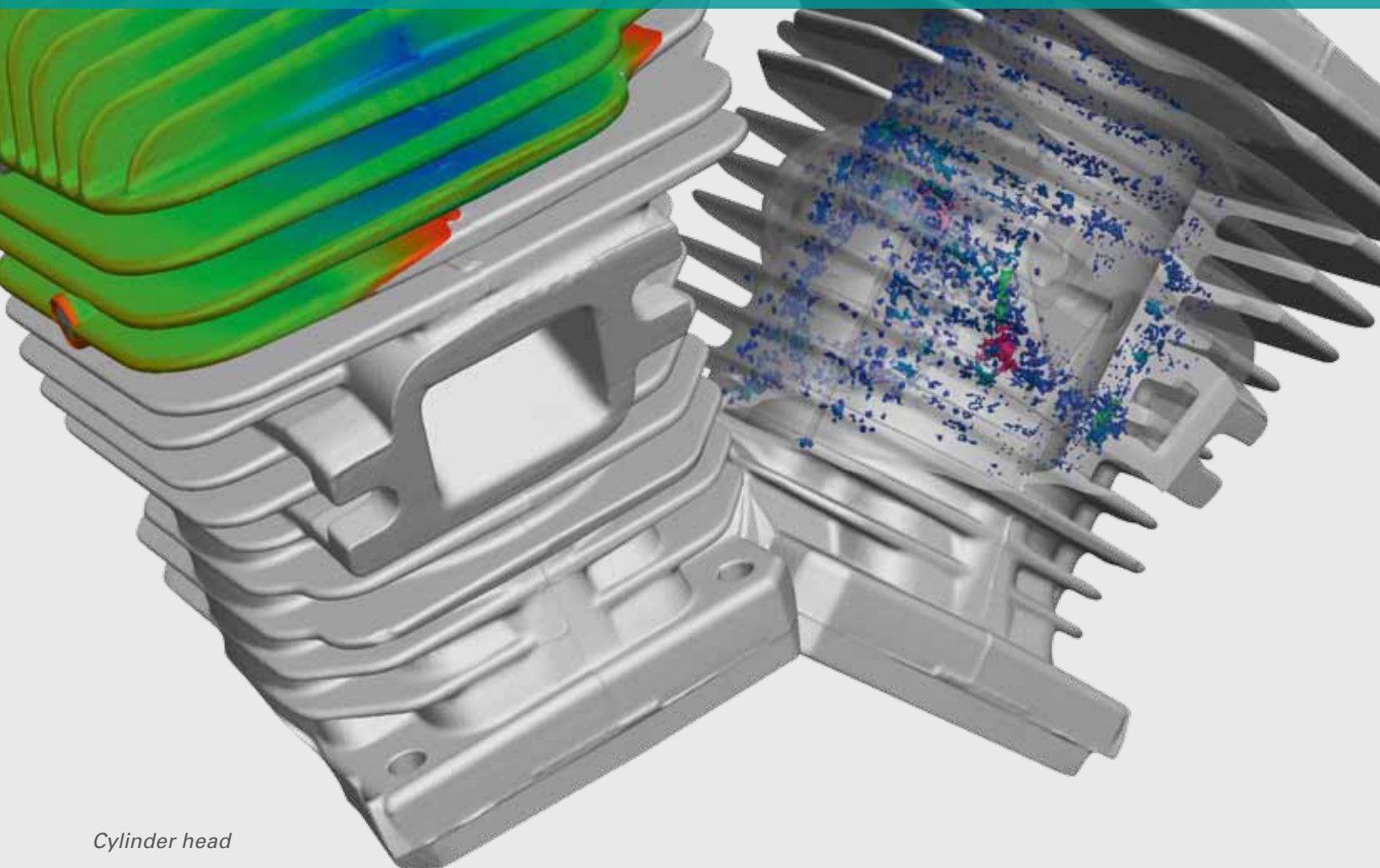
(CT) excellence also supports you in your scientific and art-related testing.

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.

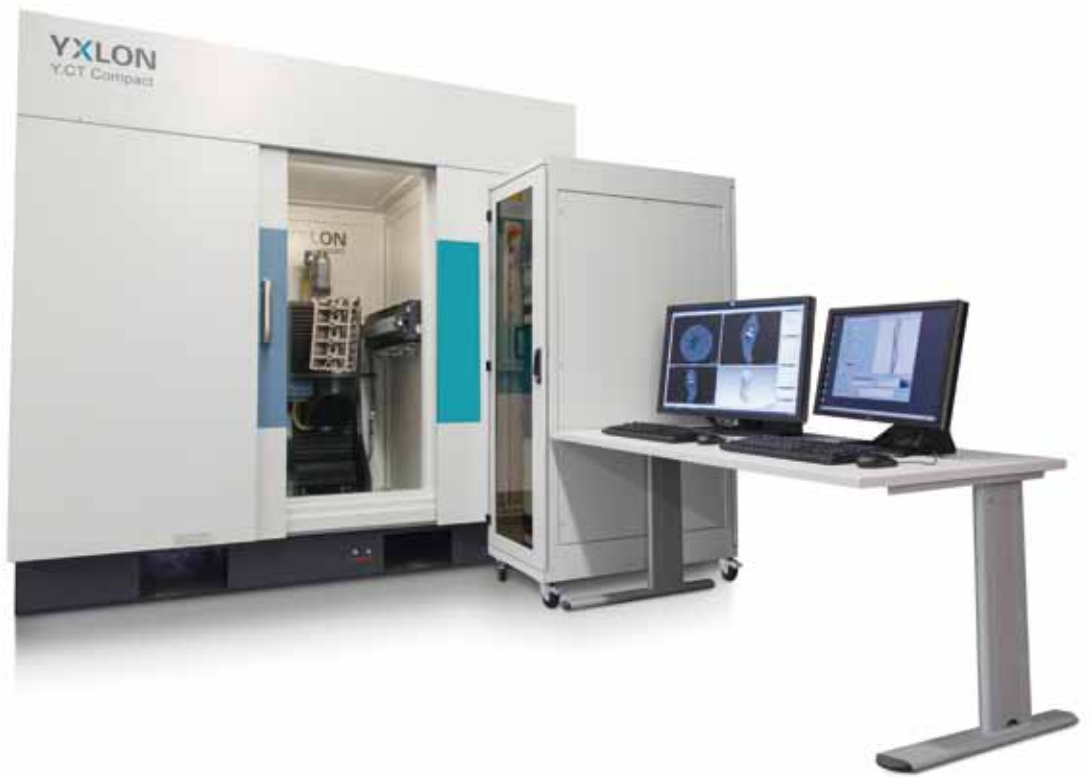
Additionally, the worldwide YXLON service network is an important factor to be taken into account when evaluating the YXLON CT price-performance ratio – one that appeals to quality managers, operations personnel, and purchasers alike.

## 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



Cylinder head



## Perform 3D inspections efficiently

Do you need to inspect large parts with a high density? Are you looking for an efficient entry point into the benefits of industrial CT? Experience the easy-to-use Y.CT Compact which saves time thanks to the outstanding function of defining single CT slices.

Benefit from premium 3D quality control and low testing costs per unit item. Automatic image enhancement via dedicated software algorithms significantly contributes to the premium image quality of Y.CT Compact.

In one test run you can create CT slices with different parameters for different areas of the test parts. This way, you speed up the testing process while maintaining image quality. Inspection time is also minimized via our multiple parts testing feature – conveniently covering more than one item per test run.

YXLON has developed a linear detector array (LDA) that further guarantees homogenous image quality and provides an unprecedented signal-to-noise ratio. Our detector calibration process helps ensure consistent image quality.

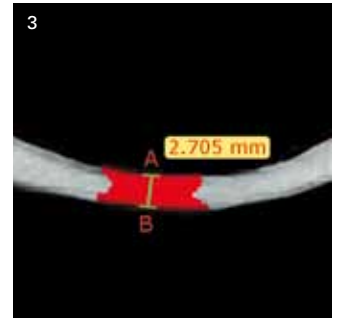
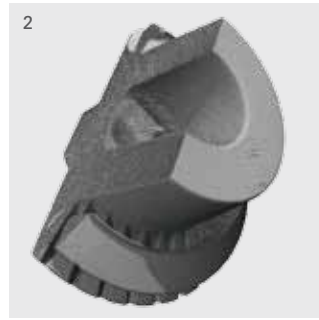
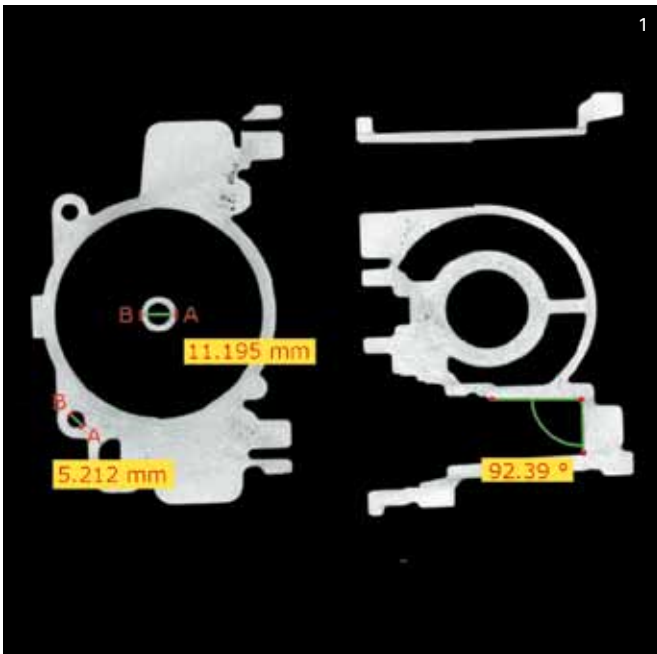
### Y.CT Compact key benefits

- Intelligent image enhancement for improved image quality
- Programmable parameters for different inspection areas to speed up processes
- Multiple parts tested in one inspection run to boost workflow
- Special software features like beam hardening correction and horizontal field-of-view (FOV) extension

# Detect what matters

Easy-to-use Y.CT Compact provides you with high-resolution 3D images – the perfect foundation for reliable inspections in your facility.

*Geological sample*



- 1 Dimensional measurement examples
- 2 FE casting
- 3 Automatic detection of wall thickness w.r.t. tolerance

## Use a workhorse with extra power

The system is equipped with a high-power X-ray tube and a line detector array developed by YXLON. Y.CT Compact generates high energy to effectively penetrate iron components up to 65 mm (ca. 2.6") thick and aluminum parts up to 250 mm (ca. 9.9"). In only 30 seconds you can analyze the 3D image or the stacked 3D model.

The mechanical capacity and performance is complemented by a number of process-enhancing software tools integrated into every Y.CT Compact

set-up. Automated center determination and beam hardening corrections eliminate the need for time-consuming manual interaction.

With the Y.CT Compact YXLON provides you with reasonably priced access to the advantages of industrial computed tomography. The system is designed for years of peak-performance inspections. You can count on rock-solid hardware and software components that reliably allow you to carry out production monitoring, quality control and prototype construction.

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

- Heavy metal castings
- Aluminum and steel components
- Cylinder heads, engine blocks and transmission housings
- Dense historical art and archeological objects
- Large 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.Exchange** – minimize your system downtime by direct exchange of original components
- **Y.Updates** – keep your system state of the art
- **Y.Academy** – train your operators

# Check out these facts and figures

	Y.CT Compact	Y.CT Compact XL	Y.CT Compact XL – Mag
<b>System Principles</b>			
<b>Inspection Mode</b>	Fan-beam CT		
<b>Manipulation</b>	2 axes		3 axes
<b>X-ray Components</b>			
<b>X-ray Tube</b>	Y.TU450-D11		
<b>Maximum energy</b>	450 kV		
<b>Maximum power<sup>1)</sup></b>	0.7 kW / 1.5 kW		
<b>Focal spot<sup>1)</sup></b>	0.4 mm / 1.0 mm		
<b>Detector</b>			
<b>Active length</b>	598 mm		724 mm
<b>Pixel pitch</b>	254 µm		
<b>Temperature stabilization</b>	yes		

1) Selectable by software. Smaller focal spot will result in lower maximum power.

<b>Inspection Item</b>			
<b>Maximum part size (Ø x h)<sup>2)</sup></b>	450 mm x 500 mm	450 mm x 750 mm	600 mm x 750 mm
<b>Turntable diameter</b>	450 mm		300 mm (optional + 300 mm extension)
<b>Maximum part weight</b>	50 kg		

2) Taller parts may be accommodated by rescanning in different orientation.

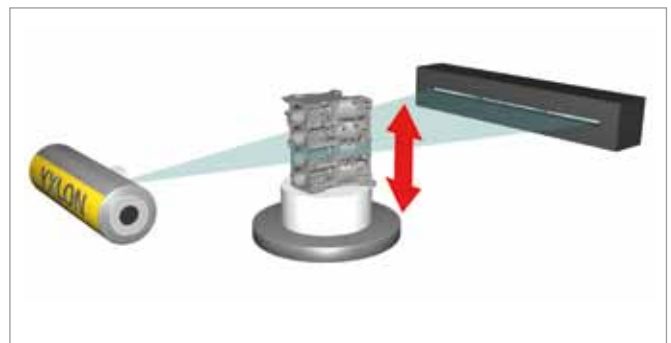
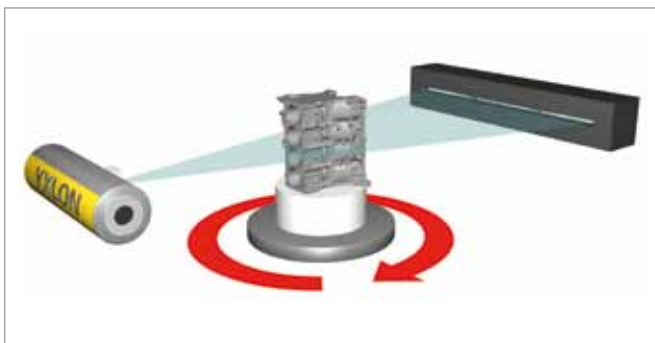
<b>CT Parameters</b>			
<b>Focus Detector Distance (FDD)</b>	1,100 mm		1,355 mm
<b>Focus Object Distance (FOD)</b>	805 mm		1,012 mm / 687 mm / 537 mm
<b>Magnification</b>	1.37		1.3 / 2.0 / 2.5
<b>Voxel size<sup>3)</sup></b>	down to 110 µm		down to 70 µm
<b>Maximum Field of View (FOV)</b>			
<i>Optimized for speed or maximum size modes</i>			
<b>Standard mode (Ø x h)</b>	360 mm x 500 mm	360 mm x 750 mm	370 mm x 750 mm @ Mag 1.3 250 mm x 750 mm @ Mag 2.0 195 mm x 750 mm @ Mag 2.5
<b>Extended mode (Ø x h)<sup>4)</sup></b>	450 mm x 500 mm	450 mm x 750 mm	600 mm x 750 mm @ Mag 1.3 465 mm x 750 mm @ Mag 2.0 360 mm x 750 mm @ Mag 2.5
<b>Minimum scan time</b>	< 15 sec. per slice		
<b>Minimum reconstruction time</b>	< 15 sec. per slice (computed in parallel to scan of next slice)		

3) Determined by geometry and reconstruction parameters without undersampling.

4) Utilizing horizontal field-of-view extension.




<b>Cabinet</b>			
<b>Cabinet size (w x h x d), approx.</b>	2,340 mm x 2,290 mm x 1,690 mm	2,340 mm x 2,480 mm x 1,690 mm	2,460 mm x 2,550 mm x 1,860 mm
<b>Cabinet weight, approx.</b>	10,000 kg	11,000 kg	13,000 kg

Values are for standard system design and are approximate. See technical description for details. Other configurations on request.



Principle of fan-beam CT: Rotation of part is followed by a vertical movement. This sequence is repeated until the desired area is scanned.

**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 radiography)	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.

# YXLON

Technology with Passion

**GERMANY – HEADQUARTERS**

**YXLON International GmbH**  
Essener Bogen 15  
22419 Hamburg  
Germany  
T: +49 40 527 29-0

[www.yxlon.com](http://www.yxlon.com)

**CHINA**

**YXLON X-ray Equipment Trading Co., Ltd.**  
1C1809 Web Time Center  
Room A309, Building 2,  
17 Zhongguancun South Ave.  
Beijing 100081, P.R. China  
T: +86 10 8857 9581  
F: +86 10 8857 9580

**USA**

**YXLON Sales & Service Location  
COMET Technologies USA Inc.**  
5675 Hudson Industrial Parkway  
Hudson, OH 44236  
USA  
T: +1 234-284-7849

**JAPAN**

**YXLON International KK**  
New Stage Yokohama Bldg.,  
1st Floor  
1-1-32 Shinurashima-cho  
Kanagawa-ku  
Yokohama, 221-0031  
Japan  
T: +81 45 450 1730