Led by experience. Driven by curiosity.

FF85 CT

High resolution and ultimate inspection versatility for science & research.

comet
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Comet Yxlon – this is who we are.

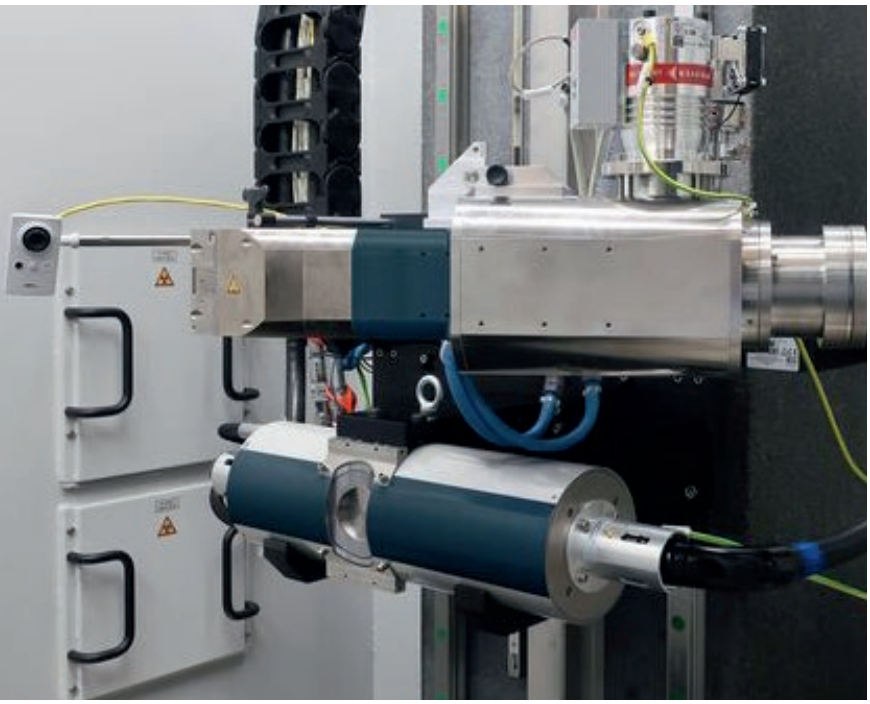
Comet Yxlon designs and manufactures high-end X-ray and CT system solutions for industrial environments – based on customer-centric product development. We're proud to be part of Comet, the globally leading Swiss technology company with a focus on plasma control and X-ray technology.

Led by experience.
Driven by curiosity.

Deeper insights.

Looking beyond the surface is our core competency at Comet Yxlon – but not only in a technical way.

Zooming in on your industry, applications and business challenges allows us to develop innovative and relevant solutions that help you shape future markets. Faster time to market? Avoiding production downtimes? The perfect image with the highest resolution, as fast and easy as possible? Whatever your goal – let's talk about it!



You can switch between the different tubes in one CT sequence.

Your benefits with the FF85 CT:

- Large inspection envelope: FOV extensions, multiple trajectories
- Precise manipulation and temperature stability
- New VistaX feature packages for best-in-class image quality and speed
- Intuitive Geminy user interface
- Optional 450 kV mesofocus tube

As versatile as your applications.

A new level of flexibility: Thanks to its dual-tube configuration and the choice of two detectors, the high-energy, high-resolution FF85 CT covers a wide variety of applications.

Small parts, large parts, dense materials – with its possible combination of two X-ray tubes, a spacious flat-panel detector and / or the CTScan 3 line detector, the FF85 CT is up for almost everything. Seamless switches between 2D radioscopy, 3D cone-beam, and fan-beam CT provide outstanding flexibility and allow for individual inspection processes.

You choose: microfocus, minifocus or our mesofocus tube

While the minifocus tube, with its high energy of up to 600 kV, is the right solution for large and dense parts, the directional microfocus tube (up to 300 kV) provides detailed insights into the inner structures of small components. Our 450 kV mesofocus combines the robustness and high energy of our minifocus tubes with the spatial resolution of the open microfocus tubes by five selectable focal spots.

Flat-panel detector, line detector – or both?

The optional equipment with a large flat-panel detector optimized for high energies and the Comet Yxlon CTScan 3 line detector for challenging applications enables an above-average range of use for the FF85 CT. With its unprecedented signal-to-noise ratio and a pixel pitch of 254 µm, the CTScan 3 is the no-alternative solution for the crystal-clear inspection of large and / or dense components.

It is designed for up to 600 kV operation reducing unwanted scatter radiation, providing low-noise electronics and highly efficient scintillators.

The granite-based manipulator

Rock-solid and granite-based: The seven-axe manipulator guarantees temperature stability and smallest thermal expansion for maximum precision and accuracy.

Which items can be inspected with the FF85 CT?

Aluminum, steel and super alloy components
Additively manufactured parts
Battery cells, modules and systems
Fiber-reinforced composites
Plastic injection molded parts
Cultural assets, historical art and archeological objects
Geological, paleontological and biological samples
Mechatronic modules

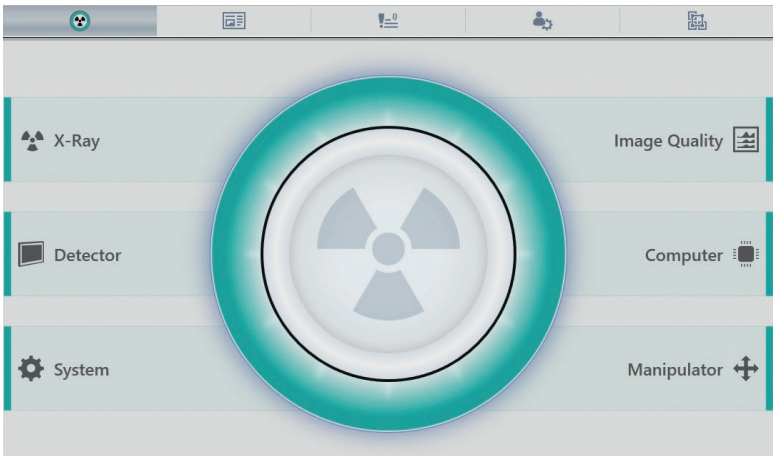
Which applications is it designed for?

Material and structural analysis in R&D
First article inspection
Dimensional measurement
Small series inspection
Failure analysis
Assembly checks
Digitization
Segmentation

Easy operation. Ultimate flexibility.

Our Geminy software helps users perform inspections as easily as possible – and boasts some highly potent CT techniques for maximum image quality and diverse field-of-view extensions.

As the single user interface for all workflows, Geminy uses automation, wizards and presets to guide users of different skill levels smoothly through the inspection process. In addition, its powerful CT techniques facilitate the optimum part size spectrum, speed, and image quality.



Geminy's Healthmonitor shows the current system condition.

Collision protection

The intuitive SmartGuard takes collision protection to the next level. Benefit from highest magnifications without risking damage to part or system by following the exact outline of your part.

Helical scan trajectories

- HeliExtend – to avoid cone-beam artifacts
- HeliExtend Dual – combined offset and helical CT scan for very large parts
- Both HeliExtend and HeliExtend Dual available as QuickScan and QualityScan
- QuickScan allows for 3 to 5 times faster scanning

Scan extensions

- Horizontal field-of-view extension
- Vertical field-of-view extension
- Combination of horizontal and vertical field-of-view extensions

Image quality optimizations.

ScatterFix 2.0

The innovative ScatterFix 2.0 functionality developed by Comet Yxlon reduces scatter radiation to improve the quality of the CT data, e.g. for optimized surface determination.

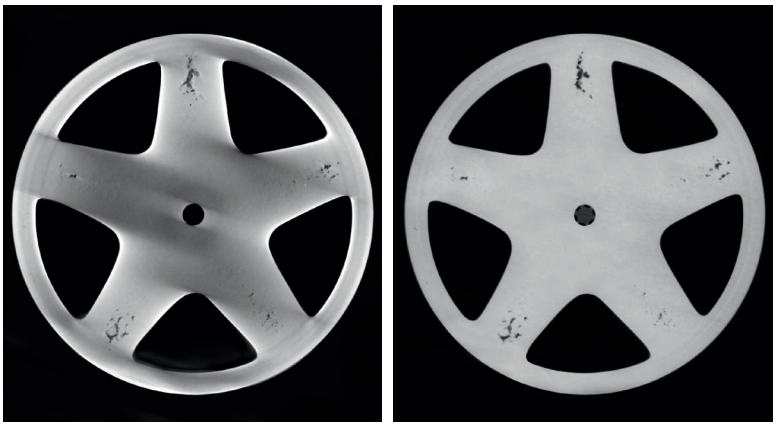
Beam hardening correction (BHC)

It allows the correction of unwanted gray-value gradients in otherwise homogeneous materials, e.g. in order to reliably carry out a pore analysis.

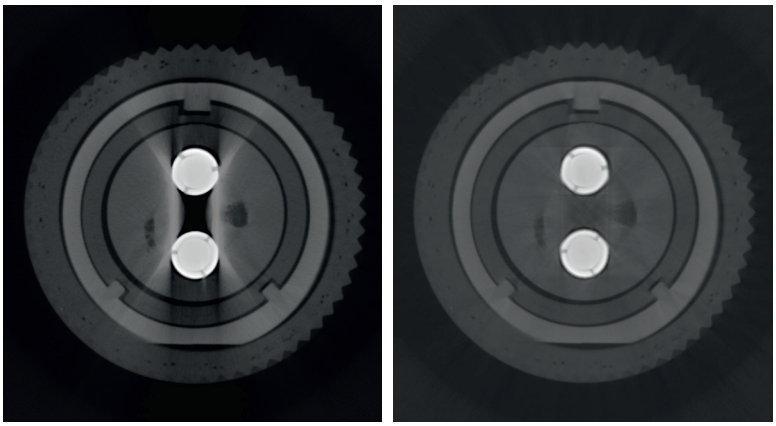
Metal artifact reduction (MAR)

With complex components consisting of plastics and metals, MAR significantly reduces the interfering effects causing the less dense material to 'disappear'.

Improving image quality: Cone-beam CT without (left) and with ScatterFix 2.0 (right).

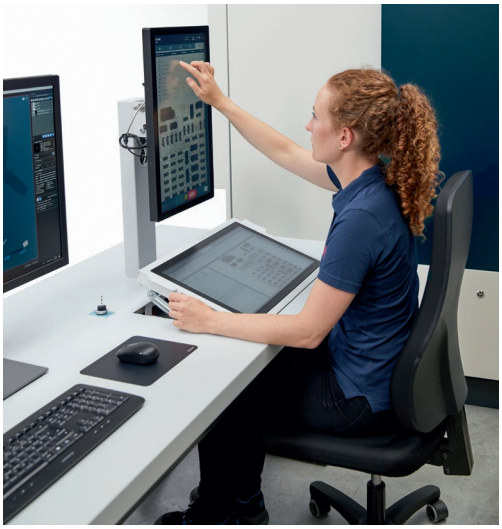


Eliminating unwanted gray-value gradients: Cone-beam CT without (left) and with Beam Hardening Correction (right).



Reducing interferences: Cone-beam CT without (left) and with Metal Artifact Reduction (right).

Ergonomic. Intuitive. Accessible.



In the FF85 CT, software and hardware work hand in hand to make system operation as easy as possible. The clean layout of the operator desk with tiltable touchscreens allows users to stay focused on the inspection task. The height of the desk can be adjusted, facilitating operation from a sitting or standing position. Healthmonitor and push messages keep the user informed about system status and inspection progress at all times.

VistaX.
See better. Faster. More.

Opening new horizons: With best-in-class image quality and unprecedented speed, VistaX significantly increases productivity. The powerful CT software solution comes in different feature packages.

Vista.

The best-in-class entry-level package contains these features:

QuickScan / QualityScan

Choose a mode according to your requirements: Use QuickScan for a revealing overview or QualityScan for high-resolution in-depth analysis.

SpeedMode

Achieve up to three times* faster scans for parts of a flat geometry than with the classic QualityScan while keeping image detail resolution.

FlexCenter

Your ROI is not in the center of the turntable? FlexCenter provides a flexible rotation axis – no need for part repositioning.

VistaX.

See finest details in unrivaled resolution: In addition to all features of the Vista package, VistaX also comprises ZoomScan.

ZoomScan

Increase your resolution by up to ten times* compared to QualityScan. Just combine SmartGuard with the revolutionary ZoomScan feature, and the system follows your part's exact outline. Additionally activate the SpeedMode to increase scan speed by up to three times*.

VistaX Pro.

Setting new standards in productivity: In addition to all VistaX features, VistaX Pro also contains LayerScan.

LayerScan

The Comet Yxlon computed laminography solution is the most efficient technology for highest resolution slice images of flat parts without the need for 360° rotations. Furthermore, it accelerates the scan speed by up to five times*.

* Achieved magnification and acceleration of scan times depend on the geometry of the part.

Our supportive Life Cycle Service.

At Comet Yxlon, service is not an add-on, but an integral part of every product. We support you through the entire life cycle of your system – for easy operation and extended product life.

Offline applications, at-line scenarios, or in-line implementation – Comet Yxlon supplies tailored service solutions for a wide range of production environments. Whether you are an X-ray beginner or a CT expert, whether you need introductory training or a performance upgrade: Our service team is here to support you.

1. Getting you started

Our professional Comet Yxlon field service technicians or certified service providers will ease your way into working with your new inspection system.

- Bringing the system to life: installation & commissioning
- Power on: introductory training by Comet Yxlon Academy
- Correct measurements from the start: SmartCalibration
- Cost transparency from the beginning: flat fee service rates

2. Running things smoothly

Is there an issue? No problem. Our skilled service technician team helps with troubleshooting, maintenance, and part exchange for easy operation.

- High efficiency thanks to remote control and VisualAssist
- Professional phone support and on-site visits
- Preventive maintenance and SmartExchange
- High-end system monitoring with SmartCalibration

3. Enhancing performance

With our upgrades and conversion kits, your Comet Yxlon system remains in top-notch condition and keeps its value as market demands change.

- System release upgrades, feature & performance upgrades
- Component upgrades
- System software upgrades
- Advanced Academy training

Tailor-made Service Level Agreements

Our Service Level Agreements are based on different performance factors, e.g.

ServicePass – for fast reaction times and seamless maintenance

SmartPass – focusing on the highest possible system availability

LifeCyclePass – the all-inclusive premium contract for guaranteed life-cycle-costs

Please contact us to learn more about the specifics of our different service contracts!

FF85 CT in numbers.

Inspection parts

Max. part size (Ø x H)	1,200 x 2,000 mm[1]; or larger on request
Max. inspection envelope 3D (Ø x H)	up to 1,200 x 1,500 mm (minifocus & flat-panel detector); up to 950 x 1,390 mm (minifocus & LDA)
Max. part weight	400 kg

X-ray source

	FXT-190.61	FXT-225.48	XWT-300-CT	Y.TU 450-M01	Y.TU 450-D11	Y.TU 600-D02
Tube type	nanofocus, open	microfocus, open		mesofocus, sealed	minifocus, sealed	
Energy range	20 - 190 kV	20 - 225 kV	20 - 300 kV	20 - 450 kV	20 - 450 kV	20 - 600 kV
Max. power	80 W	320 W	350 W	50 / 100 / 250 / 350 / 450 W	700 / 1,500 W	700 / 1,500 W
Max. target power	15 W	280 W	300 W	50 / 100 / 250 / 350 / 450 W	700 / 1,500 W	700 / 1,500 W
Focal spot size[2]	<1 µm	6 µm	5 µm	60 / 100 / 250 / 350 / 450 µm	0.4 / 1.0 mm	0.7 / 2.0 mm
Features	TXI[3], multifocus, cooled	TXI[3]	Automatic Intensity Control (AIC); cooled	LaB6, Metal-Ceramic Insulator	Metal-Ceramic Insulator	Metal-Ceramic Insulator

Detector

	Flat-panel detector		Line detector	
	4343HE	4343N	CTScan 3-620	CTScan 3-780
Max. energy	16,000 kV	450 kV	600 kV	600 kV
Active area	427 x 427 mm	432 x 432 mm	620 mm	780 mm
Pixel matrix	3,070 x 3,072 px	2,880 x 2,880 px	2,432 px	3,072 px
Pixel pitch	139 µm	150 µm	254 µm	254 µm
Max. frame rate	25 Hz (3 x 3 binning)	60 Hz (4 x 4 binning)	100 Hz	100 Hz

Manipulation

Focus-detector distance (FDD)	up to 2,050 mm (minifocus & LDA)

Cabinet / System

Dimensions (W x D x H)	cabin dimensions on request
Weight	~ min. 9,900 kg[4]
Mains connection	3-phase 230 / 400 V AC ±10 %, 50 / 60 Hz, zero, ground; transformator available
Max. power consumption	5.3 kVa (450 kV system)

[1] Collision protected by manual definition of cylinder. [2] For minifocus X-ray tubes, the focal spot size is determined according to EN12543.
[3] TXI = true X-ray intensity – controls real output dose for constant intensity. [4] Depends on configuration.

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