

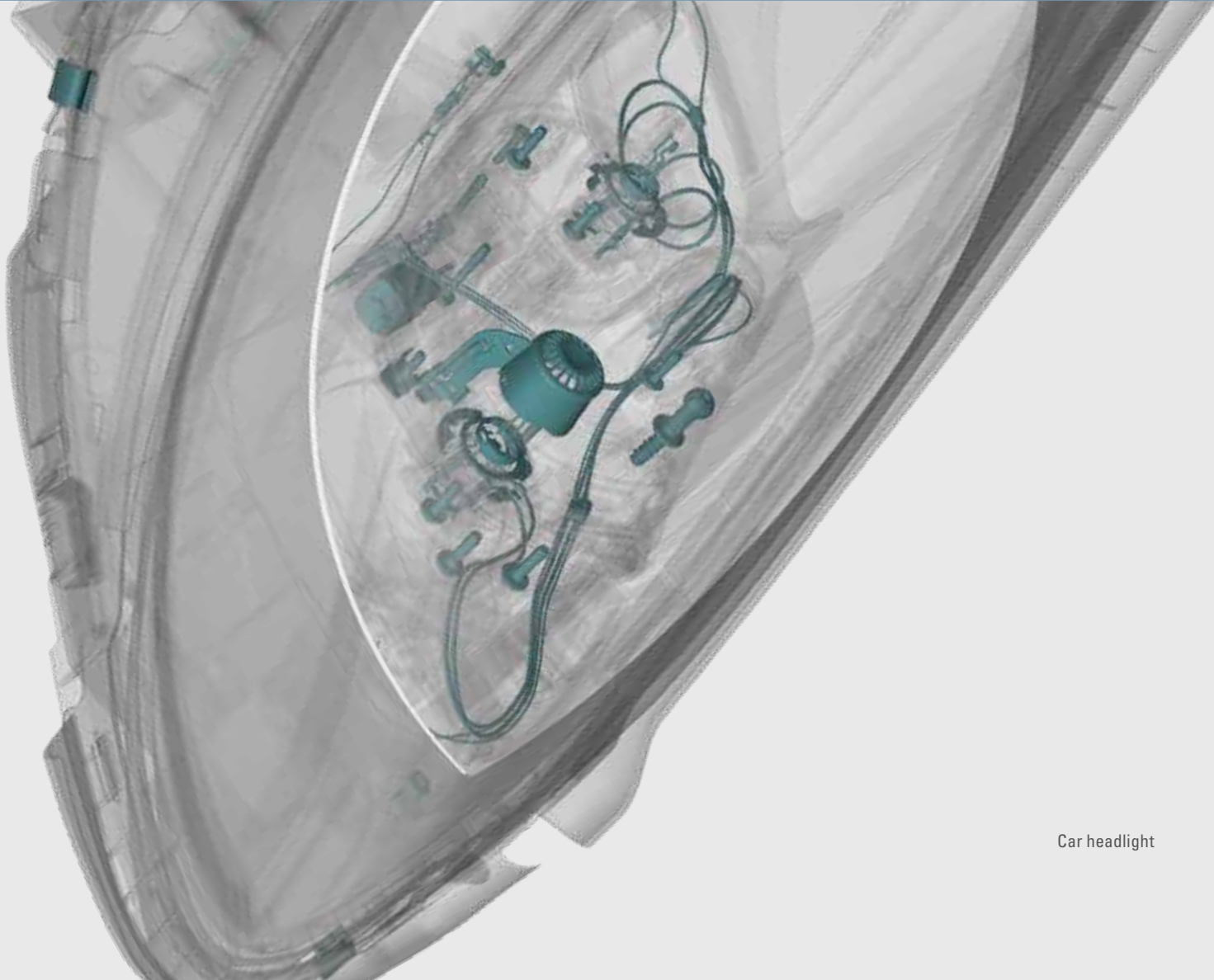


YXLON FF85 CT

HIGH-ENERGY AND HIGH-RESOLUTION COMPUTED TOMOGRAPHY (CT) INSPECTION SYSTEM FOR A WIDE SAMPLE SPECTRUM

- CT system with new dimensions in flexibility, versatility, and modularity
- Extensive range of applications
- Intuitive Gemini graphical user interface with touch screen operation

Do you need to examine a wide range of part sizes from very small to large? Do you have to inspect very dense and fine items? The YXLON FF85 CT provides the most diverse inspection portfolio among current X-ray and CT systems thanks to its high-performance hardware and innovative software features.



Car headlight



Newest generation of flat panel detector and line detector array for maximum versatility



High-energy minifocus X-ray tube and high-resolution microfocus X-ray tube

Experience inspection versatility

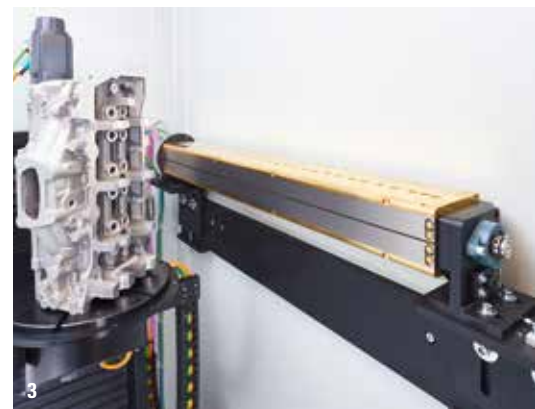
The optional combination of two tubes with a spacious flat panel detector (FPD) and a linear detector array (LDA) caters to the broadest application range and enables you to efficiently test different parts in one run. A high-energy minifocus X-ray tube and a high-resolution microfocus X-ray tube are at your disposal throughout a single inspection sequence. The minifocus tube, with its high power, reduces the scan times significantly allowing you to get the work done faster. With the microfocus X-ray tube you can count on high-resolution results for smaller samples. Together, they operate to accommodate very large scan volumes by using the FPD or the LDA.

Another building block that contributes to the premium performance of FF85 CT is the rock-solid granite based manipulator; which makes this system extremely precise and durable. You'll benefit from warp-resistance and temperature stability.

With FF85 CT your investment is secure because the system is truly future-proof. You can rely on continuous updates and upgrades. It runs on YXLON's common and highly intuitive and user-friendly software platform Gemini. This allows developments in other systems to be seamlessly transferred to the FF85 CT.

YXLON FF85 CT KEY BENEFITS

- Extensive range of applications using up to 600 kV minifocus and a up to 300 kV directional microfocus tubes
- Expanded inspection envelope with horizontal field of view extension, Helical and dual Helical CT techniques
- Flexible ROI CT scanning thanks to virtual rotation axis
- Increased versatility via high precision manipulation with up to 7 axes
- Intuitive touchscreen operation
- Revolutionary inspection sequence creation using icons
- Clear health status indication of the system condition via Health Monitor



- 1 Ergonomic touch monitor arrangement with Gemini interface
- 2 Precise inspection part manipulation with additional handheld terminal
- 3 New LDA generation Yxlon CTScan 3 for crystal-clear fan-beam CT

Perfection of CT inspection made simple and efficient

The two ergonomically arranged **touch monitors** of the user interface Gemini are one important element for the ease of use. You can control the CT systems via graphical symbols. Presets, wizards, and assistants guide the operator through his inspection tasks. At the same time, the scan results are displayed on the second monitor for your direct evaluation.

If the manipulation of test part and X-ray components is particularly critical you can position all axes directly in front of the system by use of the handheld terminal. This saves time and increases your efficiency.

The new **CTScan 3** line detector array has been developed and is manufactured by Yxlon for customers' special requirements. With its unprecedented signal-to-noise ratio, its dynamic range, and a pixel pitch of 254 μm , it is the no-alternative solution for a crystal-clear inspection

of high and dense components.. It is designed for up to 600 kV operation reducing unwanted scatter radiation, providing low-noise electronics and highly-efficient scintillators: I.e. compared to a standard LDA with a 200 μm pixel pitch, CTScan 3 proves a scintillator conversion volume that is more than 3 times larger.

WHERE DO YOU USE THE YXLON FF85 CT?

- research and development
- first article inspection
- dimensional measurement
- small series inspection
- failure analysis
- defect and material analysis
- assembly checks

Get the most out of your CT scans

You can easily combine the 2D **Highly-Dynamic Radioscopy** (HDR) and 3D CT inspection tasks into one sequence and graphically create your individual imaging chain via drag and drop icons.

Use Yxlon's helical CT scanning **HeliExtend and HeliExtend Dual** for tall parts, create an accurate image without the need of stitching and reduce artifacts for an accurate, brilliant image.

You can further expand the bandwidth of inspection parts by the use of **ScanExtend**, the Yxlon feature for horizontal and/or vertical field-of-view extension.

The virtual rotation axis **FlexCenter** gives you the freedom to inspect any region of interest in detail without having to reposition the part physically. You even don't need to adhere to any sample positioning techniques, because FlexCenter recognizes your part and defines the rotation axis itself.

Additionally, you can apply software improvement tools:

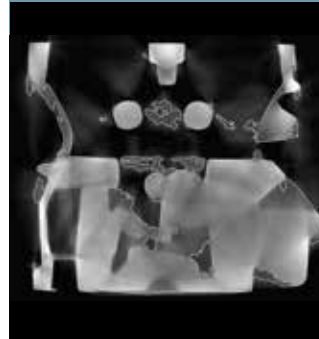
ScatterFix: The innovative ScatterFix functionality developed by YXLON reduces parasitic scattered radiation and thereby improves the quality of the CT data. This effect is an essential advantage, e.g. for an optimized surface determination, when inspecting large, massive and strongly scattering components.

Beam Hardening Reduction (BHC) can be used model based for single-material objects or in multi-material mode, where materials such as Carbon, Tungsten, Aluminum and Steel can be selected.

Metal Artifact Reduction (MAR) reduces heavily disturbing metal-induced artifacts in multi-material parts.

WHICH ITEMS AND MATERIALS ARE ESPECIALLY SUITABLE FOR THE YXLON FF85 CT?

- aluminum, steel and super alloy components
- additive manufacturing samples
- fiber-reinforced composites
- plastic injection molded parts
- historical art and archeological objects
- geological samples
- biological samples
- mechatronic modules



Without Scatterfix



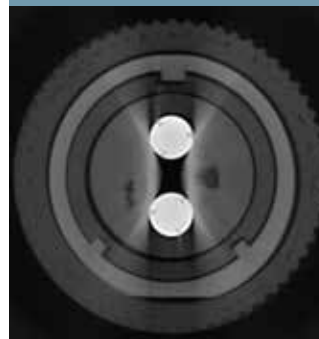
With Scatterfix



Without BHC



With BHC



Without MAR



With MAR



YXLON Service Engine 4.0

To support our customers' success, we created our Service Engine 4.0 including first-class technical problem-solving combined with high economic efficiency. This engine drives our service, our processes and our partners to detect and correct failures quickly and reliably by remote access and during on-site visits. Our service centers and our service partners worldwide are at your disposal and can be contacted by phone, e-mail or via our website.

YOU BENEFIT FROM

- guaranteed operational safety
- maximized system availability
- minimized repair times
- full cost control of life-cycle costs
- extended product lifetime
- maintaining the measuring capability of metrology systems [FF20/35 CT Metrology]

Our module-based approach such as performance and feature upgrades enable you to adapt to future requirements and safeguard your initial investment by extending the product lifetime. With our Service Engine 4.0, fast support for you is provided by the way we network all service activities with our organization. We not only see your immediate need but are predictive of your future needs.

YXLON LIFECYCLE SERVICES

Academy – full performance from day one through tailored training solutions

SmartExchange – direct replacement of defective or worn-out components to minimize unscheduled system downtime

SpareParts – 100% compatibility and safety through Yxlon qualified spare parts

WarrantyPass – full cost control through our customizable warranty extension program

ServicePass – predictive maintenance and servicing, tailored to your requirements

SmartPass – maximum system uptime for customers with particularly high demands

LifeCyclePass – all-inclusive concept for full cost control over the entire product lifetime

Support – fully digitalized 1st-line support organized in a worldwide expert network, available remote or on-site

Upgrades – performance increase and new features for your Yxlon system portfolio

Check out these facts

YXLON FF85 CT

Inspection modes

Cone-beam, helical, and fan-beam CT

X-ray components

X-Ray tube 1	Microfocus tube 225 kV	Microfocus tube 300 kV
X-ray tube type	Open, unipolar, micro-focus	
Maximum energy	225 kV	300 kV
Maximum power	320 W	350 W
Target type	Reflection target	
Detail visibility	≥ 4 μm ¹⁾	

X-Ray tube 2	Minifocus tube 450 kV	Minifocus tube 600 kV
X-Ray tube type	Sealed, bipolar, metal-ceramic, mini-focus	
Maximum energy	450 kV	600 kV
Focal spots	0.4 mm / 1.0 mm	0.7 mm / 2.0 mm
Maximum power	700 W / 1500 W	
Target type	Reflection target	

Detectors

Detector 1	Flat Panel Detector 4343HE	Flat Panel Detector 4343N
Scintillator	Gadox	Gadox, CsI
Maximum energy	16,000 kV	450 kV
Active area	427 mm x 427 mm	432 mm x 432 mm
Pixel pitch	139 μm	150 μm
Pixel matrix	3,072 x 3,072	2,880 x 2,880
Maximum frame rate	25 fps (3x3 binning)	60 fps (4x4 binning)
Dynamic range	16 bit	16 bit

Detector 2	Line Detector Array CTScan 3-620	Line Detector Array CTScan 3-780
Scintillator	CdWO ₄	
Maximum energy	600 kV	
Active area	620 mm	780 mm
Pixel pitch	254 μm	
Pixel matrix	2,432	3,072
Maximum frame rate	100 fps	
Dynamic range	16 bit	

Manipulator Data

Configurations	Microfocus – Flat panel detector	Minifocus – Flat panel detector	Minifocus – Line detector array
Max. FDD (Focus-Detector-Distance) ²⁾	2,000 mm or larger on request		
Maximum magnification ²⁾	300	10	
Maximum part size (Ø x h) ²⁾	1,000 mm (collision protected) x 2,000 mm or larger on request		
Maximum part weight	400 kg		
Manipulator dimensions ²⁾	3,600 mm length x 1,450 mm width x 2,550 mm height (or more for larger manipulators)		
Manipulator weight ²⁾	9,000 kg (or more for larger manipulators)		

CT parameter

Circular scan trajectories	Continuous rotation "QuickScan", start/stop scan "QualityScan"		
Helical scan trajectories	Standard helical CT "HeliExtend", dual helical CT "HeliExtend Dual" ³⁾		
Further trajectories	Horizontal and / or vertical scan field extension, virtual rotation axis "FlexCenter" ³⁾		
Configurations	Microfocus – Flat panel detector	Minifocus – Flat panel detector	Minifocus – Line detector array ⁴⁾
CT field of view (circular, Ø x h) ⁵⁾	355 mm x 305 mm	365 mm x 325 mm	605 mm x 990 mm ²⁾
CT field of view (vertical & horizontal scan field extension, Ø x h) ⁵⁾	680 mm x 1,300 mm ²⁾	710 mm x 1,085 mm ²⁾	980 mm x 990 mm ²⁾

Enclosure data

Maximum shielded energy	450 kV	600 kV
Enclosure dimensions (l x w x h) ^{2), 5)}	5,150 mm x 2,650 mm x 2,880 mm	
Enclosure weight ^{2), 5)}	31,000 kg	52,000 kg
Loading door size (w x h) ^{2), 5)}	1,000 mm x 2,200 mm	
Internal crane	Optional, maximum load 250 kg	

Operator desk

Width	~ 1,800 mm
Height	~ 700 mm – ~ 1,200 mm, motorized
Depth	~ 800 mm
Weight	~ 175 kg
Monitor	2 pcs, capacitive touchscreen, 1,920 x 1,080 pixel, 21", as well as separate reconstruction and evaluation station with 30" monitor

¹⁾ With JIMA resolution test pattern for 2D at minimal focal spot size
⁴⁾ Line Detector Array CTScan 3-780

²⁾ approximate values
⁵⁾ larger values for larger manipulators

³⁾ all available in "QuickScan" and "QualityScan" mode

YXLON



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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