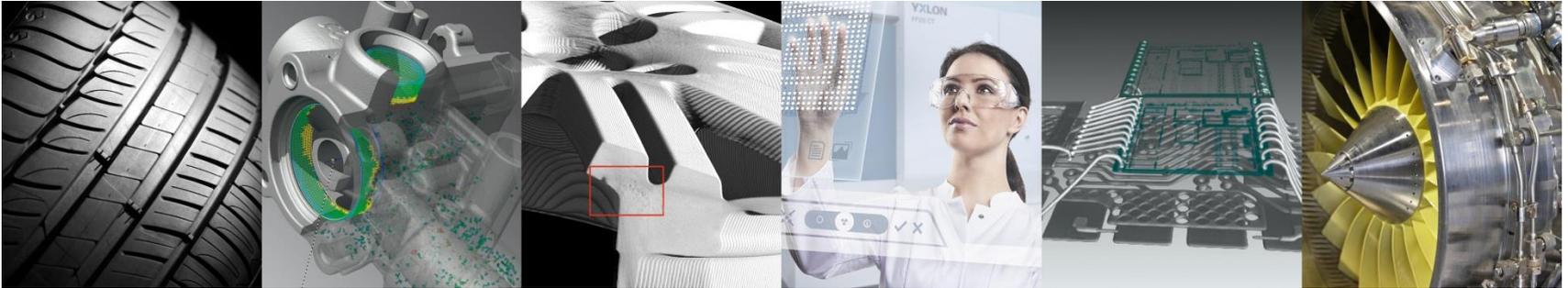


YXLON International a company of the COMET Group



Company Presentation 2019

YXLON
Technology with Passion

Agenda

-
- 1 About YXLON
 - 2 About COMET Group
 - 3 Market Data
 - 4 Customer Segments
 - 5 Product Portfolio
 - 6 Service
-

YXLON International Headquarters Hamburg



Our Vision

**We offer the key for innovation
by making the invisible visible.**

Our Mission

**We provide detection solutions
for customers of all industries
striving to create a safer and more
resource-efficient world.**

Our Roots Start with Wilhelm Conrad Röntgen

C.H.F. Müller

builds the first X-ray tube of the world



YXLON International X-Ray GmbH

results from a management buy-out of Philips



YXLON & COMET Group

YXLON becomes part of the Comet Group



YXLON is the leading provider

of X-ray and CT systems for the non-destructive testing and analysis of materials



1895

1896

...

1927

...

1998

...

2004

...

2007

2008

...

2018

...



Wilhelm C. Röntgen
discovers X-rays



Philips
acquires the C.H.F. Müller works



COMET Group
acquires FeinFocus



Merger of YXLON & FeinFocus
becoming YXLON International GmbH



Our Vision:
»We offer the key for innovation by making the invisible visible«

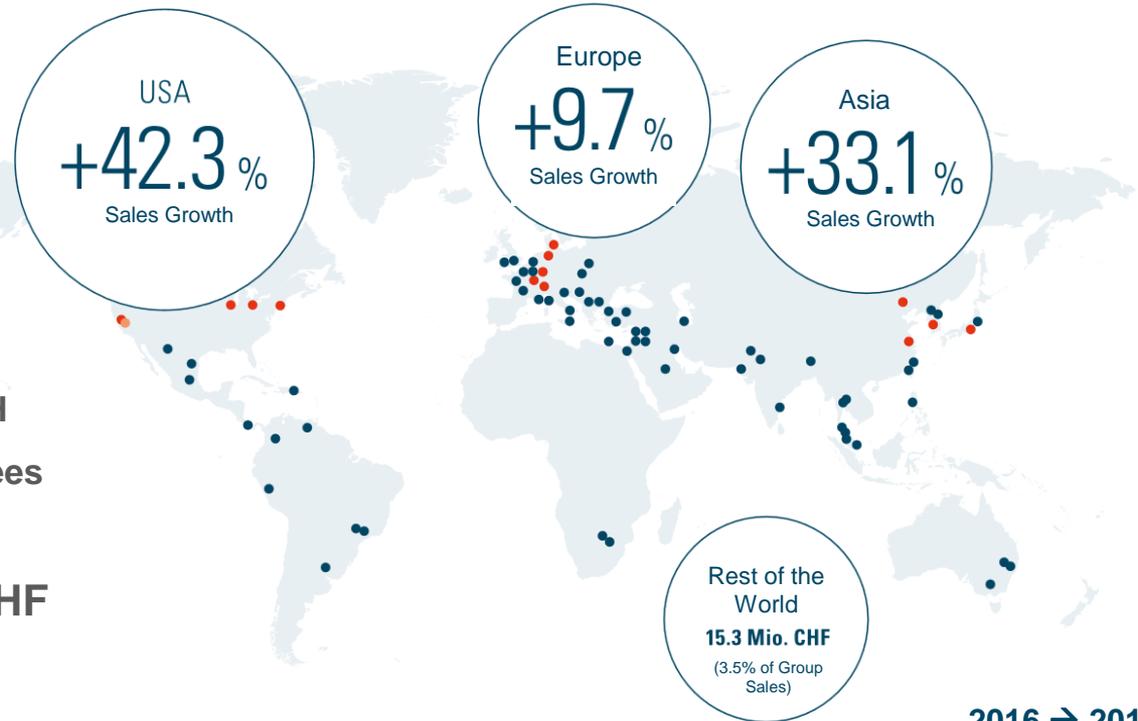
We are part of the COMET Group

The COMET Group has a strong global footprint

COMETGROUP

- Headquarters: Flamatt / CH
- Worldwide ~ 1400 Employees
- Global Sales and Service

Sales 2017: 438.4 Mio. CHF



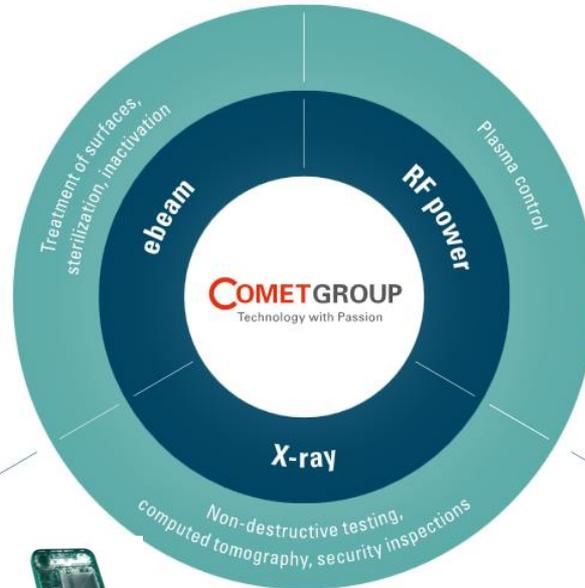
2016 → 2017

We are part of the COMET Group

“Creating tomorrow’s solutions, today.”



More resource-friendly and more efficient production with packaging sterilization



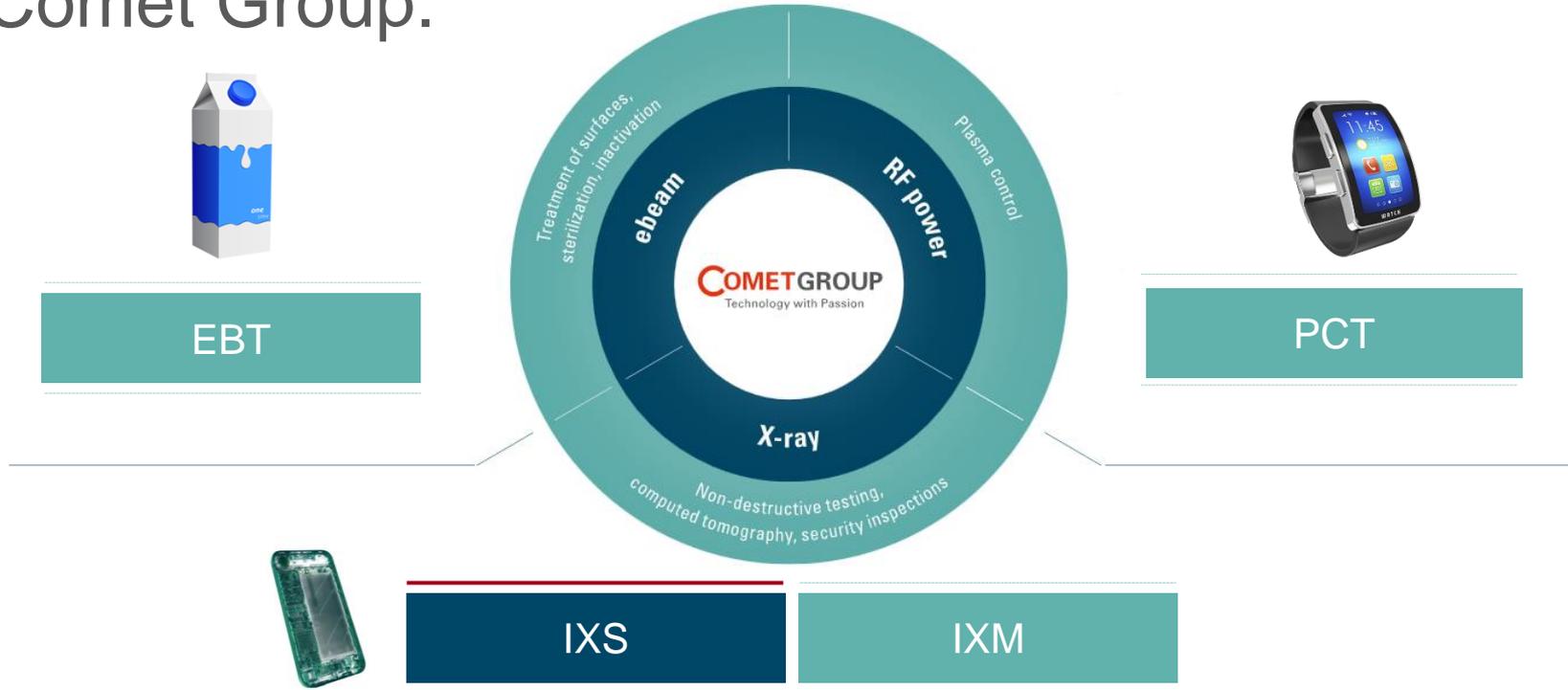
Basis for the production of touchscreens and memory chips



Clear insights for more efficiency, quality and safety; basis for innovations

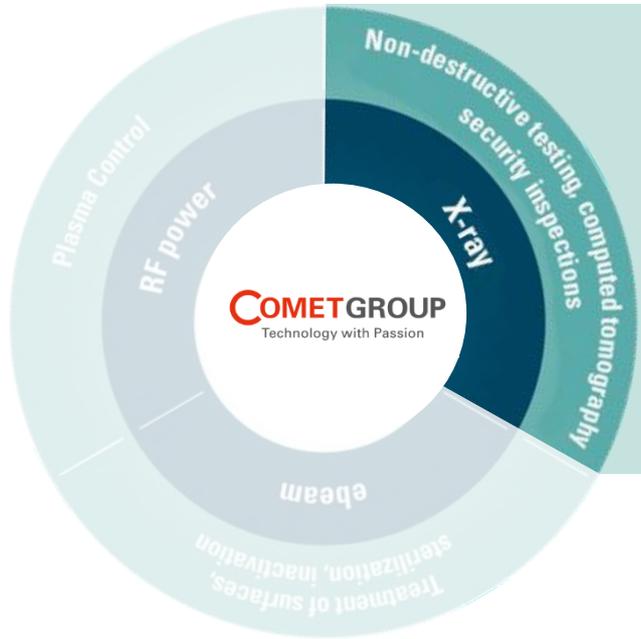
We are part of the COMET Group

We as „IXS“ are one of four segments of the Comet Group.



We are part of the COMET Group

We (IXS) focus on system solutions and develop some of our key components ourselves.



IXS

Systems

(in part own components)



YXLON

IXM

Components



COMET / YXLON

We are the segment IXS

As of 2019

Our global footprint as IXS

7

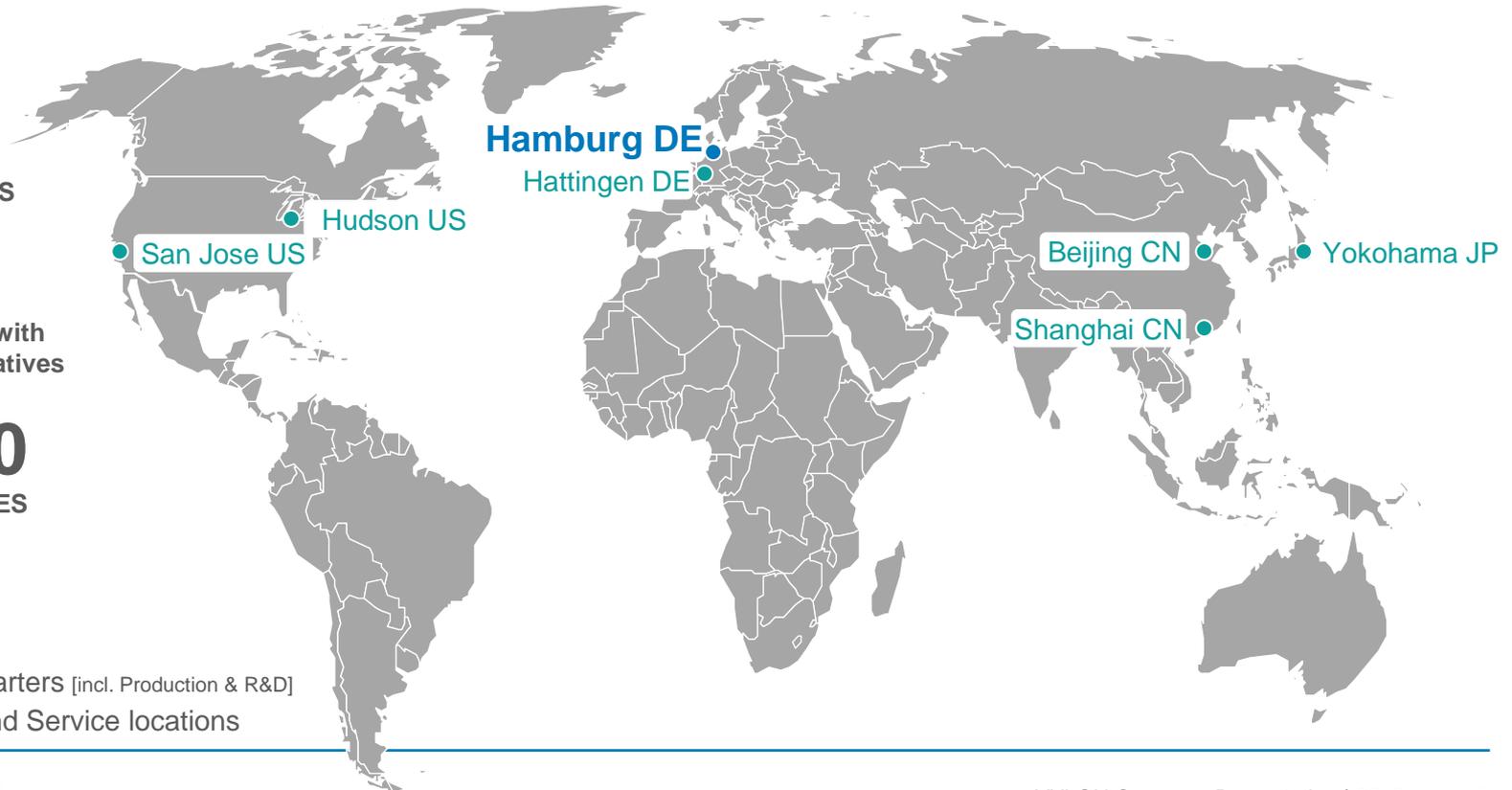
LOCATIONS

50

Countries with
Representatives

>400

EMPLOYEES
worldwide



● Headquarters [incl. Production & R&D]

● Sales and Service locations

We are the segment IXS

Seven locations on three continents with ca. 400 employees



Hamburg,
Headquarters



Hattingen,
YXLON Inspection
Services



Hudson, USA &
San Jose, USA



Yokohama,
Japan



Peking & Shanghai,
China

We are the segment IXS

Market Turnover 2017

Total Sales: 137.3 Mio. CHF

Sales split by region

In percent

9.1

6.3

Other countries

13.3

18.8

USA

50.3

44.0

Asia

27.3

30.9

Europe



Sales split by market

In percent

27.8

28.7

Electronics

3.7

3.2

Others

43.7

38.2

Automotive

11.6

18.4

Aerospace

13.2

11.5

Science & New Materials

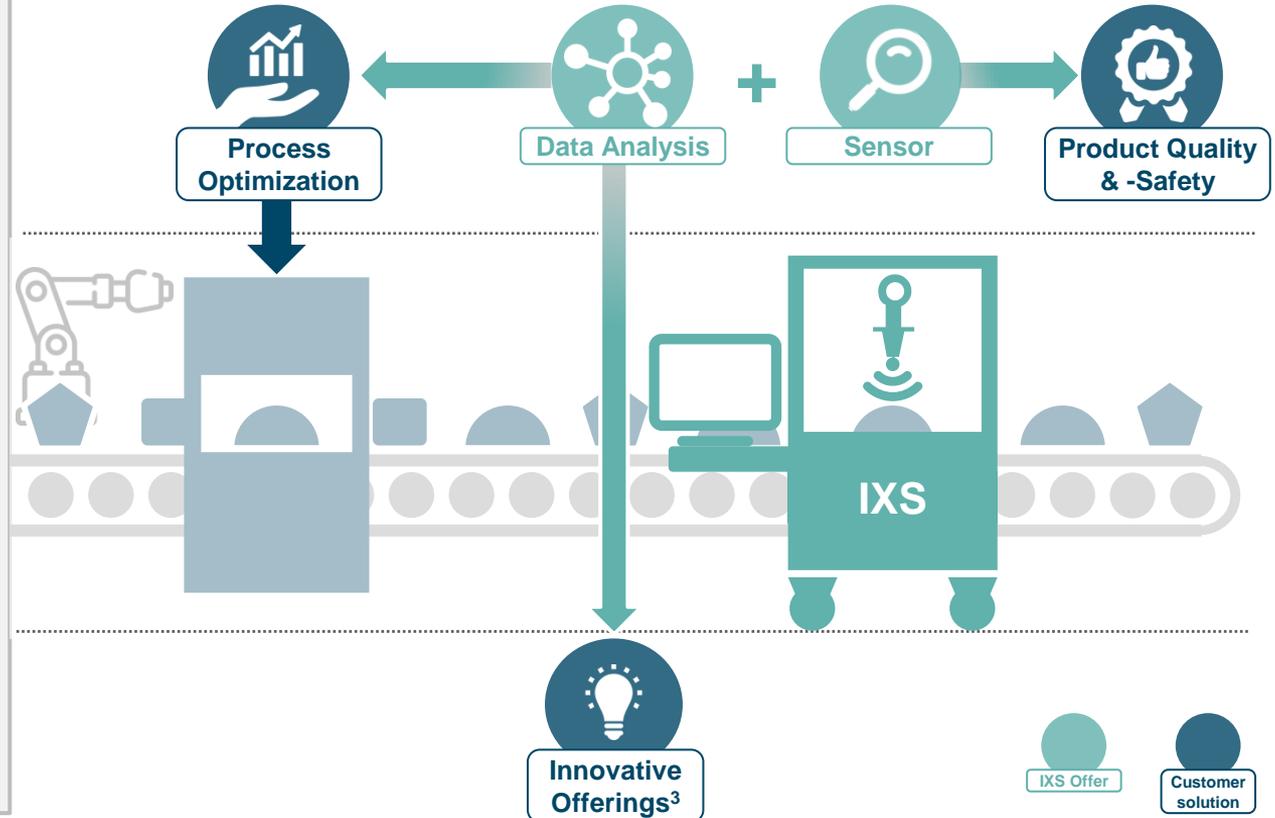


We are the segment IXS

We provide industrial X-ray and Computed Tomography Solutions

which enable our customers on an efficient way to

- check their product quality and safety
- optimize their production processes
- develop innovative offerings



YXLON Product Overview



**Universal
X-ray Inspection
Systems**



**Microfocus
Systems**



**Computed
Tomography Systems**



**Metrology CT
Systems**



X-Ray Modules



**Microfocus
X-Ray Tubes**



**Wheel Inspection
Systems**



**Tire Inspection
Systems**

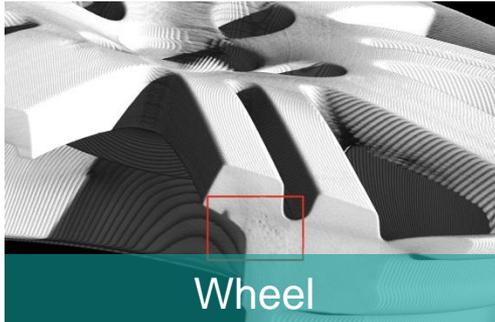
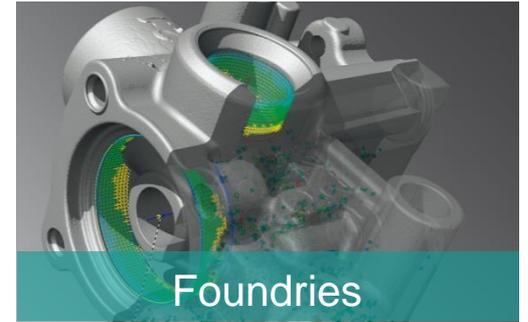
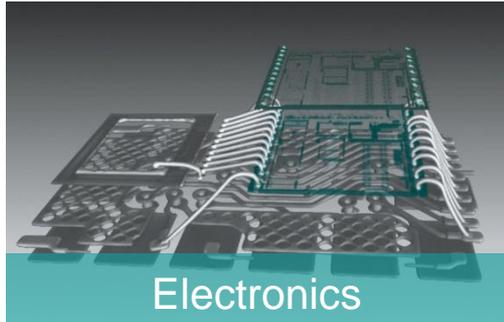


Customer Solutions

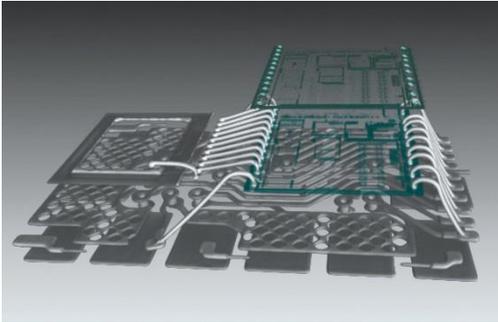


Line Detectors

YXLON offers the perfect products for your inspection tasks



YXLON Products for the Electronics Industry

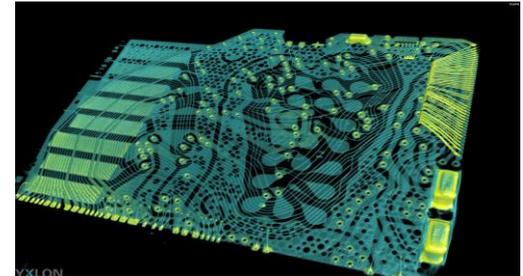
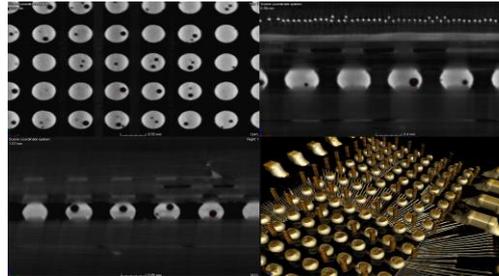
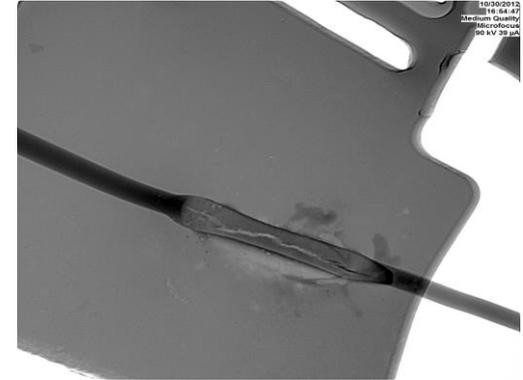
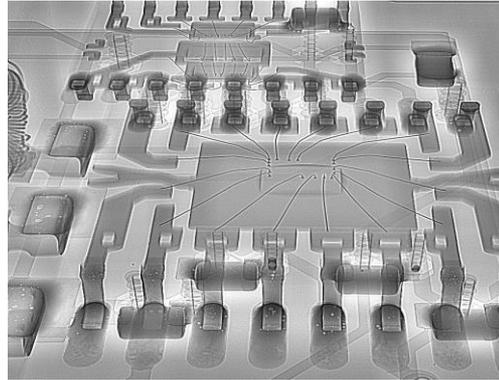


Microfocus X-ray and CT systems for electronics applications

Electronics – application examples



- Circuit boards
- Electronic and mechanical modules
- Electro-mechanical components and plugs
- Semiconductor packaging and interconnects
- Sensors
- MEMS and MOEMS



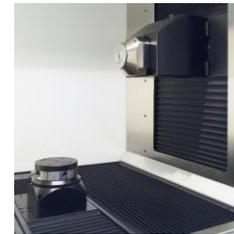
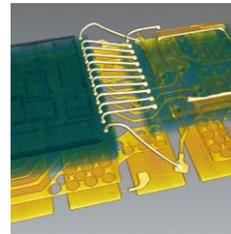
YXLON products for the electronics industry



YXLON FF20 CT

Precision at its finest

- Ultimate 3D insight into minute structures
- Smart touch operation for multiple user profiles
- Time saving remote monitoring and push messages



YXLON products for the electronics industry

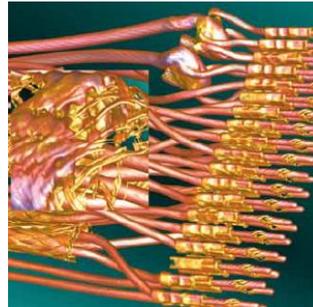
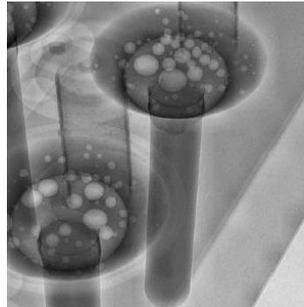
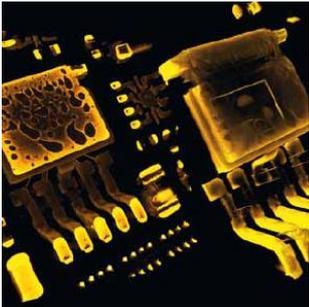


YXLON Cheetah EVO Series – SMT, Semi, Plus

No Compromise!

Customer-specific solutions
for perfect inspection results:

- for SMT applications
- in Semiconductor industry
- for laboratory tasks



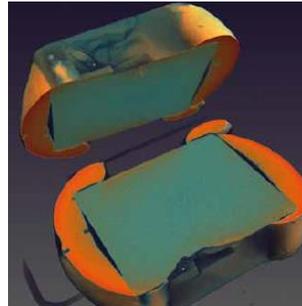
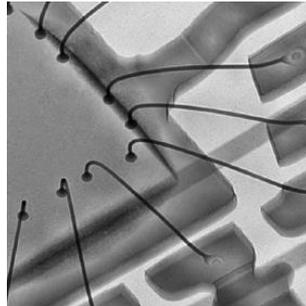
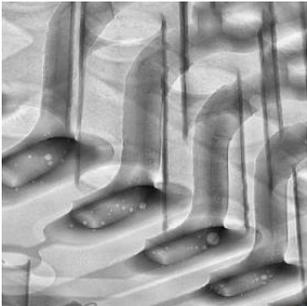
YXLON products for the electronics industry



The best X-ray inspection systems with small footprint

YXLON Cougar EVO Series – SMT, Semi, Plus

- for SMT applications
- in Semiconductor industry
- for laboratory tasks



YXLON products for the electronics industry



High-resolution Y.FXE microfocus X-ray tubes

- High-contrast and highly detailed images due to intelligent technology
- High resolution at high power output
- TXI technology for constant intensity and focus position
- Simple target and filament replacement



The Art of Detection ... in Electronics



The increasing complexity of electrical and electronic components is a major challenge for reliable quality assurance in the electronics producing industry. Precisely fulfilling the clients' strong demands and highest industrial standards, YXLON microfocus X-ray and CT systems deliver accuracy, flexibility, simplicity, and speed. Our clients benefit from the best images in shortest time. Thanks to our tried-and-tested technologies and the pioneering microfocus solutions like the FeinFocus product line YXLON raises your inspection processes to unprecedented levels of quality.

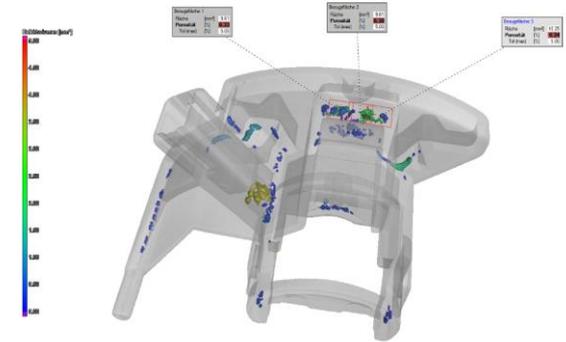
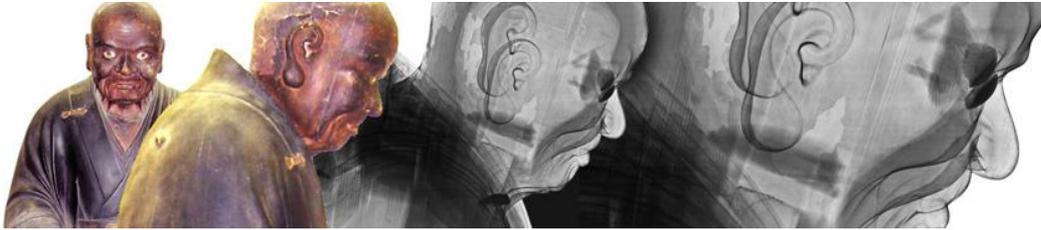
Achieving outstanding X-ray inspection processes – that is the Art of Detection.

YXLON Products for Science & New Materials



X-ray and CT systems for laboratories and R&D applications, cultural assets, fiber structure analyses, metrology, etc.

Application examples for science & new materials



- Cultural assets
- Core sample
- Fiber analyses
- Archaeological findings
- Metrology tasks
- Reverse Engineering
- etc.

Dimensional Metrology in additive manufacturing



Reverse Engineering of a historical cylinder head



Scan of a Sumatran Rhino Skull



Gold treasure of Gessel

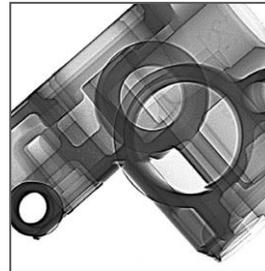
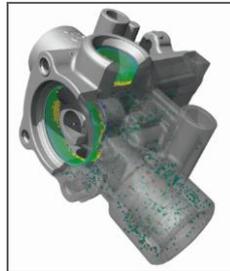
YXLON products for science & new materials



YXLON FF35 CT

Precision with ultimate versatility

- Broadest CT application bandwidth for fine parts
- Smart touch operation for multiple user profiles
- Time saving remote monitoring and push messages



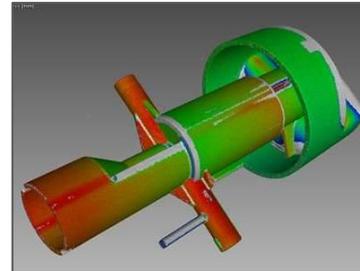
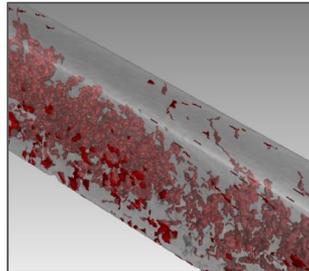
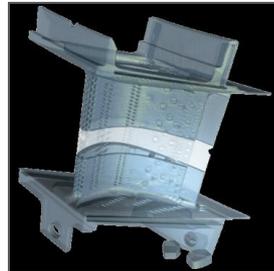
YXLON products for science & new materials



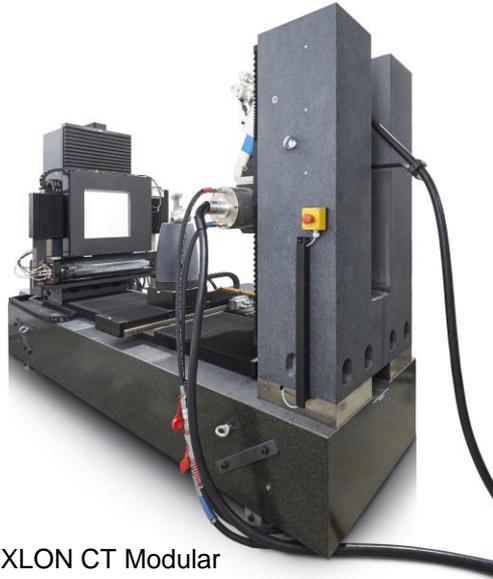
YXLON CT Precision

Industrial microfocus computed tomography system

- Precise three-dimensional data
- Long-term stability
- Rapid results



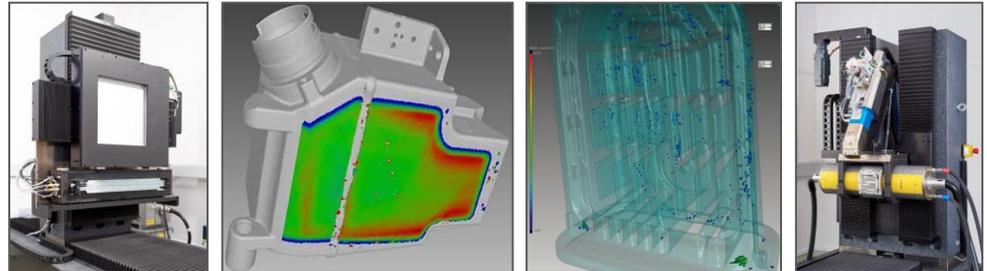
YXLON products for science & new materials



YXLON CT Modular

Industrial microfocus computed tomography system

- Microfocus X-ray tube
- Minifocus tube up to 600kV
- Line and flat-panel detector
- Easily upgradable
- Large spectrum of inspection items

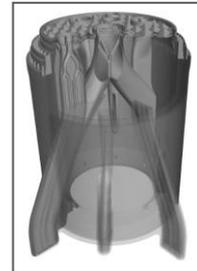
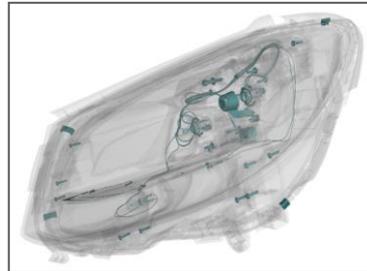


YXLON products for science & new materials



High-power, high-resolution CT inspection system of the new generation

- 225 kV microfocus X-ray tube
- 450 kV minifocus X-ray tube
- Geminy user interface with touch screen
- Manipulation with up to 7 axes
- Horizontal field-of-view extension, helical CT and dual helical CT function



The Art of Detection ... for Science & New Materials



3D looks into geological samples and excavated artifacts provide research institutes and museums with detailed findings about materials and characteristics. Although finds and soil analyses are not the only cases where YXLON CT systems are able to contribute a great deal. Development departments at industrial companies equally profit from precise computed tomography. It enables the tiniest defects in inspection items to be detected; inner structures can be analyzed and measured with certainty.

Thanks to intelligent technology, precisely depicting the hidden and concealed – that's the Art of Detection.

YXLON products for science & new materials

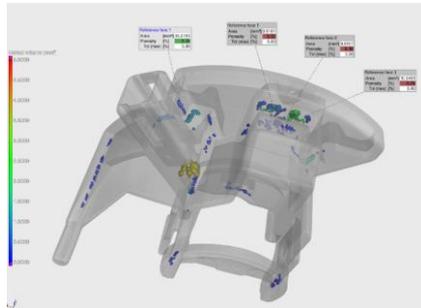


YXLON FF20/35 CT Metrology

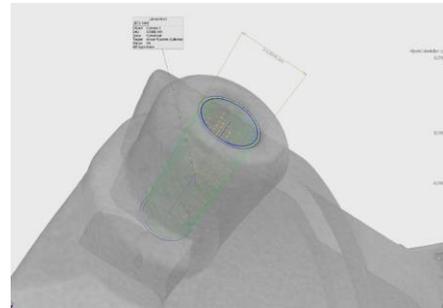


High-resolution computed tomography system for challenging metrology tasks

- Precise, non-destructive measuring of interior structures
- Data acquisition with almost unlimited measurement points
- Seamless defect analysis and nominal/actual comparison
- Conformity to the VDE/VDI 2630 standard



P201/202 Porosity Analysis



Fitpoint Deviation

The Art of CT Metrology ... for Science & New Materials

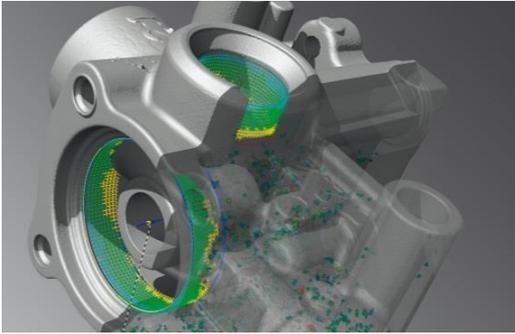


The ever-increasing complexities of industrial parts bring with them the challenge of accurate quality control. It is imperative to be able to test components throughout the whole production process, from the developmental stage to final assembly, to ensure quality from start to finish.

High-resolution computed tomography provides a state-of-the-art, non-destructive, and reliable solution for this obstacle. The intricate and costly component positioning techniques required by the structural complexity of small parts are made obsolete thanks to computed tomography. By storing the scanning data, the part can be measured multiple times even when the component is no longer available. Because these datasets do not deteriorate over time like the physical material may, they offer unprecedented possibilities in both industrial production and R&D.

Using the virtual object to precisely determining actual dimensions of both internal and external structures, creating and archiving trend analyses, and optimizing your inspection processes – That's the Art of CT Metrology.

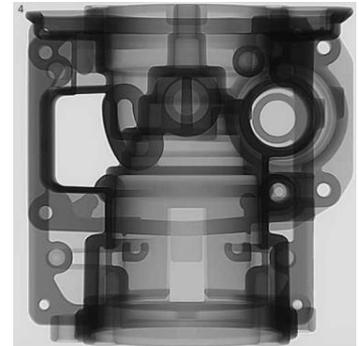
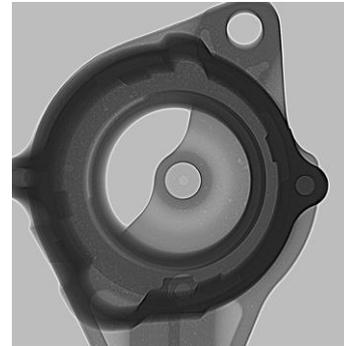
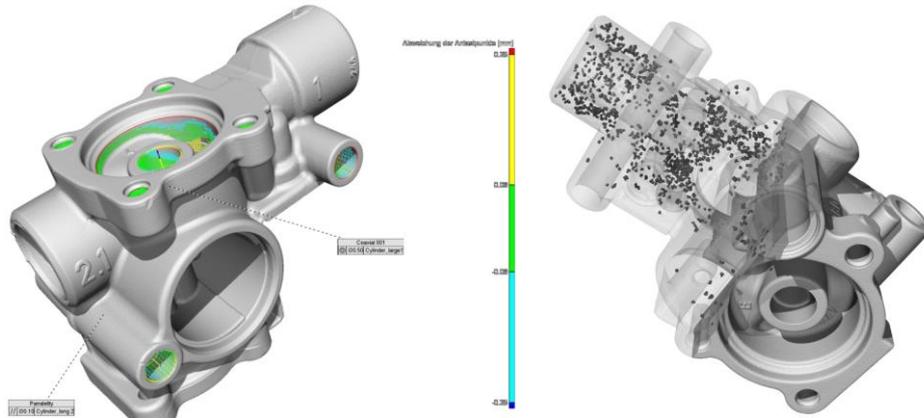
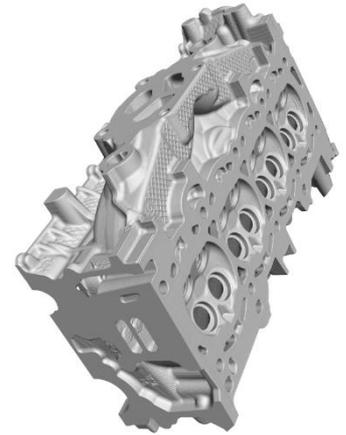
YXLON Products for Foundry Inspection



Maximum precision X-ray and CT systems for foundry applications

Inspection examples for foundries

- Detection of salt core residues
- Verification of blowholes and pores
- Porosity analysis
- Nominal-actual comparison
- Measuring of inner structures
- Wall thickness analysis



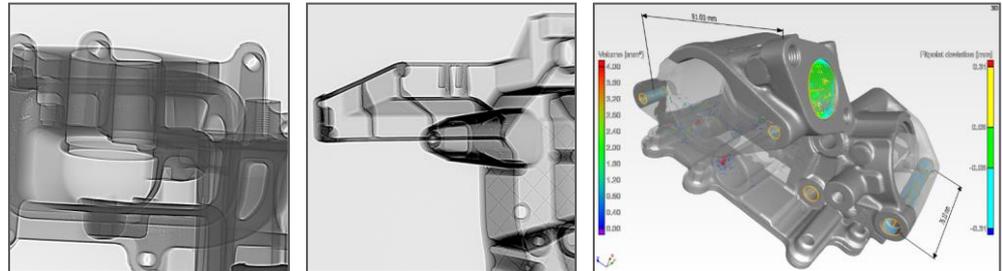
YXLON products for foundry inspection



YXLON MU2000-D with CT option

High-grade inspection quality in random and series testing

- Robust and proven technology
- Worldwide over 600 systems in use
- High-dynamic radioscopy (HDR)
- Manual and programmable inspection
- Available upgrades for existing systems



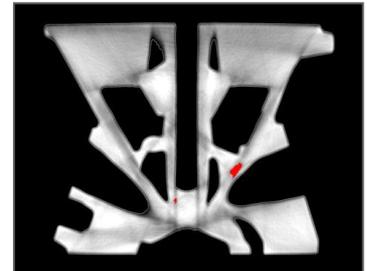
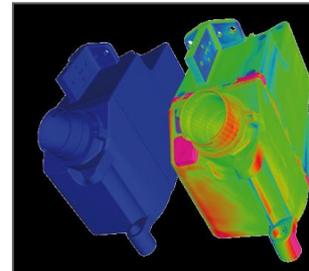
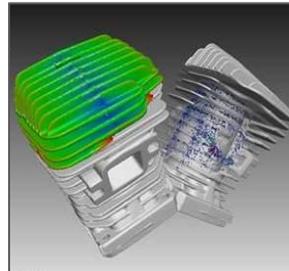
YXLON products for foundry inspection



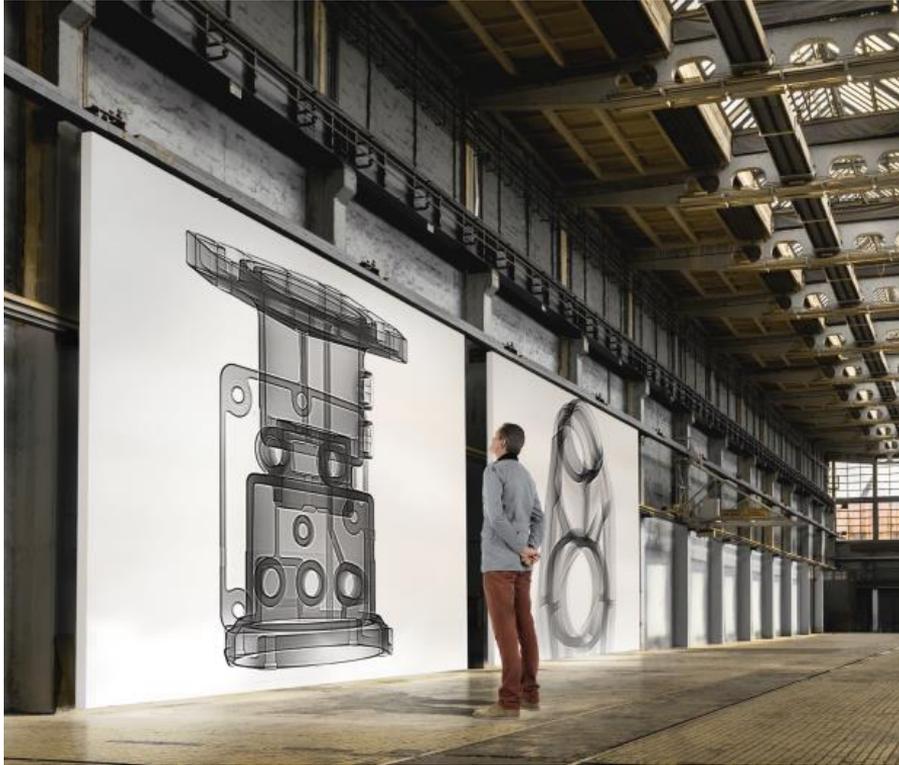
YXLON CT Compact

Compact industrial computed tomography system

- Compact construction design
- Simple operation
- Three-dimensional quality control
- Low inspection costs per unit item



The Art of Detection ... for Foundries



Cast parts for the automotive industry have to fulfill the highest standards. When choosing the right X-ray inspection system, foundries place a priority on maximum availability and reliability. X-ray systems from YXLON not only meet these requirements, but also deliver extremely brilliant digital images. Thanks to easy and intuitive operation, detailed information about all types of casting flaws are rapidly available. The result: optimally controlled production processes and decisions made with certainty.

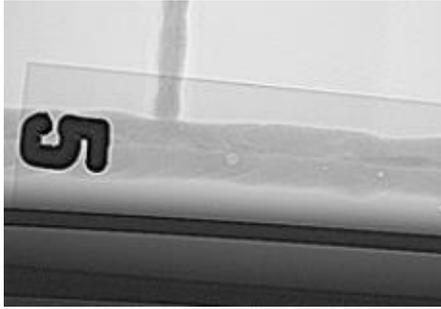
Fulfilling customer specifications with assurance thanks to efficient X-ray inspection processes – that's The Art of Detection

YXLON Products for Aerospace Inspections

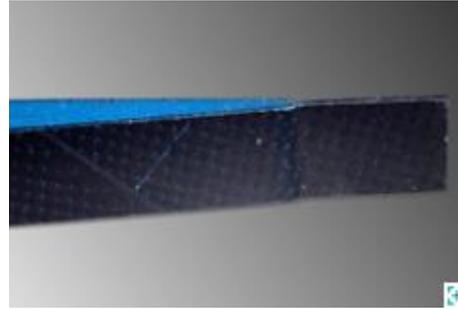


**Specially adjusted X-ray and CT systems
for aerospace applications**

Application examples for aerospace

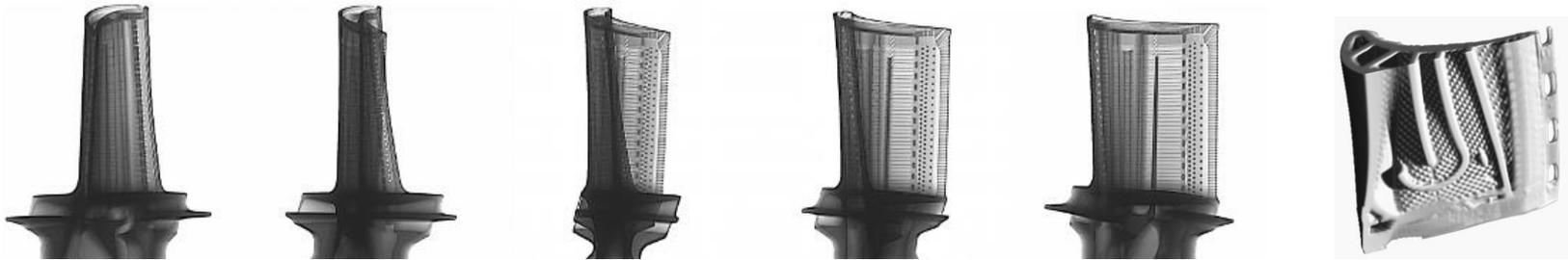


Weld inspection



Fiber-reinforced materials

- Concealed damages
- Inclusion of foreign materials
- Fiber orientation
- Delamination



Turbine blades

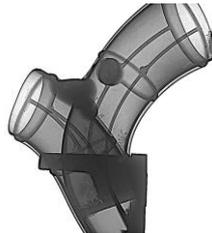
YXLON products for aerospace inspections



YXLON MU60 AE

X-ray and CT systems for flexible cast part inspection in aerospace

- Compact design for radiography and CT inspection as well as TrueInspect ADR
- User-friendly software tools and optional review station
- Networked system for continuous system availability and maximized data security
- Complies with current aerospace industry standards



YXLON products for aerospace inspections



Automated X-ray systems with robots for the for the inspection of cast parts

- High throughput
- Safe, definite and reproducible inspection decisions
- Long lifespan
- High reliability

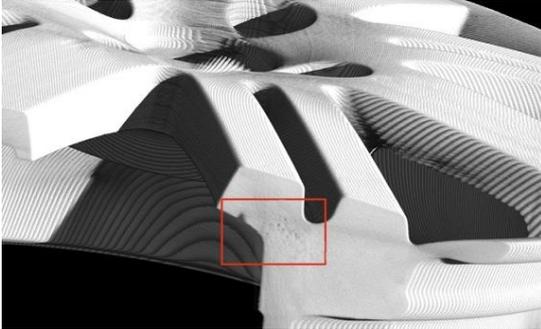
The Art of Detection ... in Aerospace



The Aerospace sector requires the highest safety and quality standards. YXLON industrial X-ray and computed-tomography systems are specifically tailored for rigorous aerospace requirements and provide secure and reliable inspections for a variety of different components and materials. Intuitive operation and brilliant images lead quickly and precisely to detailed information and clear verifications.

Achieving the demanding standards for aerospace X-ray inspection – that's the Art of Detection.

YXLON Products for Wheel Inspection



In-line and at-line X-ray and CT systems for wheel applications

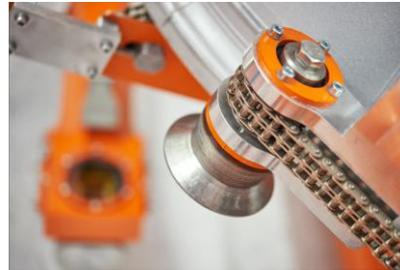
YXLON products for wheel inspection



YXLON WI26 G

Automated wheel inspection system – faster than ever before

- New flat panel detector YXLON Panel 460 for reliable inspection results
- Automatic calibration
- New gripper manipulator
- Revolving in- and outfeed doors



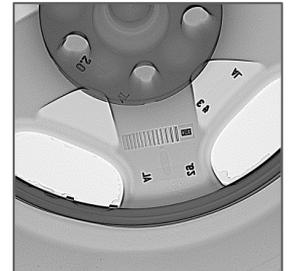
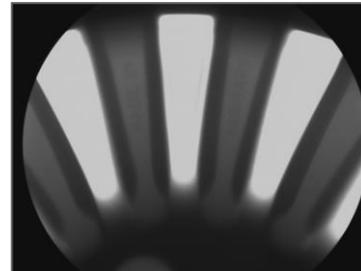
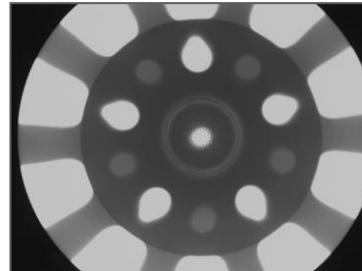
YXLON products for wheel inspection



YXLON MU231

The most successful wheel inspection system in its class

- High product throughput
- High system uptime
- Easy, intuitive operation



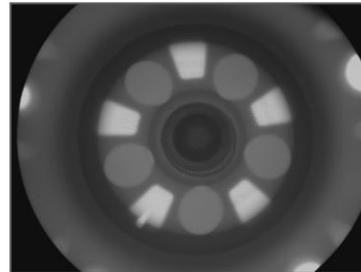
YXLON products for wheel inspection



YXLON MU2000-D Wheel

X-ray-based wheel inspection with MU2000-D Wheel

- Clear-cut inspection decision with certainty
- Low inspection costs per unit
- High system uptime
- Low space requirement



YXLON Products for Tire Inspection



**In-line and at-line X-ray and CT systems
for tire and rubber applications**

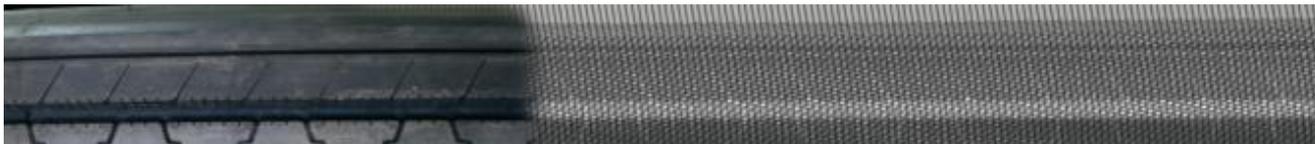
YXLON products for tire inspection



YXLON MTIS – Modular Tire Inspection System

Modular tire inspection system

- System family for different capacity requirements
- High-contrast X-ray images (in compliance with ASTM F1035)
- Realistic images due to vertical rotation with spread 4-spindle drive



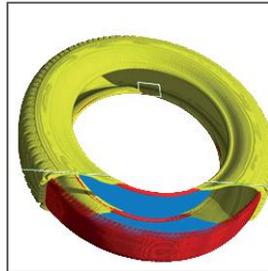
YXLON products for tire inspection



Y.CT Tire System

The CT system for tire design

- Full-scale 3D information on tire elements
- High-resolution images for R&D
- Wide variety of tire applications, even mounted on a wheel
- Tire constrain unit for inspection under real-life load-stress conditions



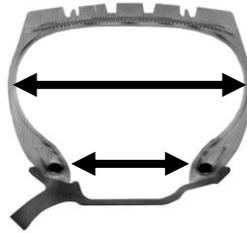
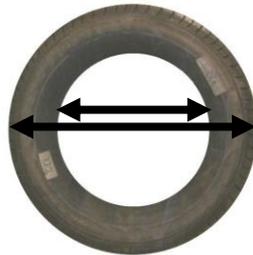
YXLON products for tire inspection



YXLON TI35

X-ray inspection system for tires of trucks, OTR and heavy-load vehicles

- Automatic inspection in mixed operation
- Bead-to-bead inspection
- 120 kV panoramic tube
- Y.UScan 3-XXL detector



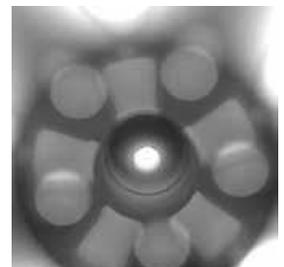
YXLON products for tire-on-wheel inspection



Y.MU2000-D Tire on Wheel

Inspection of complete wheels

- Rapid, reliable results
- Flexible and easy to use
- Robust, modern inspection technology



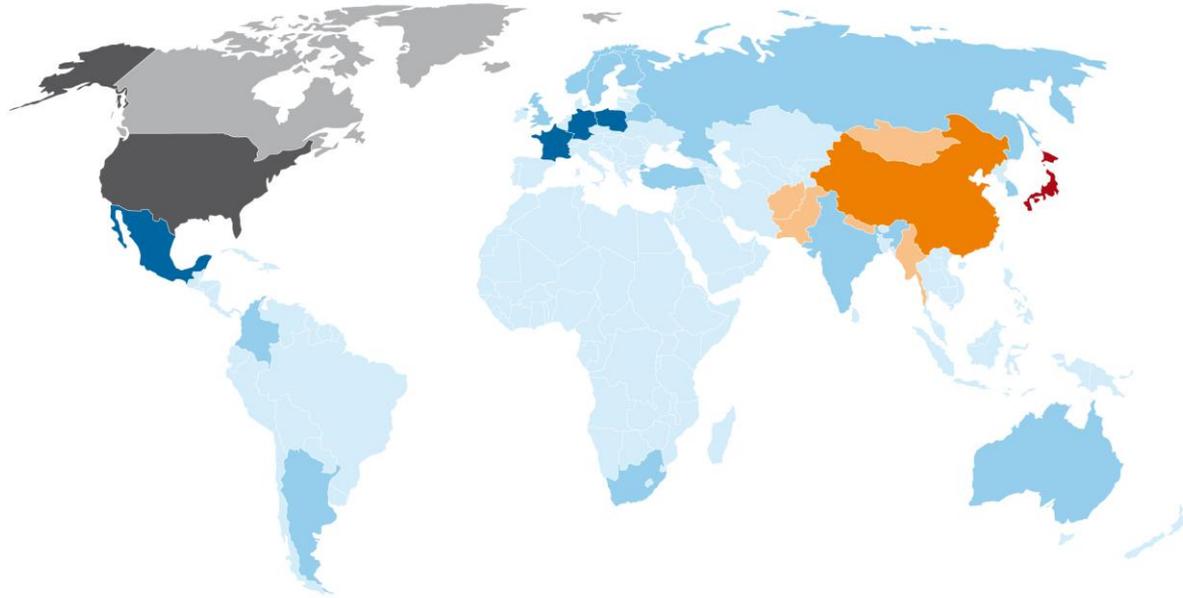
Technical Partnership



YXLON MU2000-D with CT at the Renault F1 Team Technical Center in Enstone



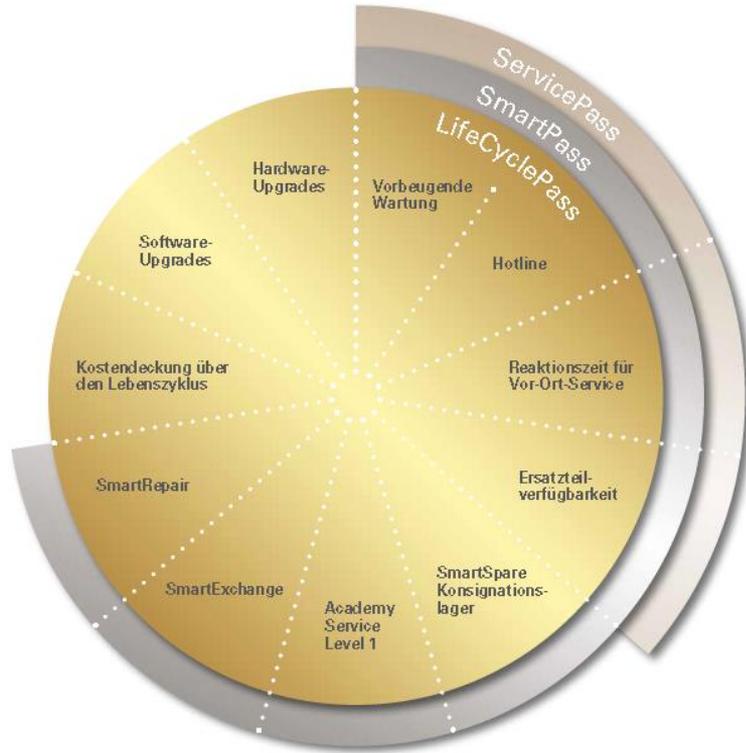
Worldwide Service



- YXLON HH / local technician
- YXLON CN / local technician
- YXLON USA / local technician
- YXLON JN / local technician
- YXLON HH / local agent
- Service from YXLON CN
- Service from YXLON USA
- Service from YXLON HH

YXLON Life Cycle Service

- for your peace of mind



- **YXLON ServicePass:**
Designed to handle the most important services tailored to your requirements
- **YXLON SmartPass:**
Perfect for customers who require the fastest spare part availability for maximum system uptime
- **YXLON LifeCyclePass:**
All-inclusive, full coverage over the lifetime of your system for predictable costs

YXLON Academy



Radioscopy- and Computed Tomography Trainings for the best and most reliable inspection results with YXLON inspection systems

BASIC:

- General knowledge about (X-ray) technology
- Overview of the system components and software
- Training of the most important system features

PLUS:

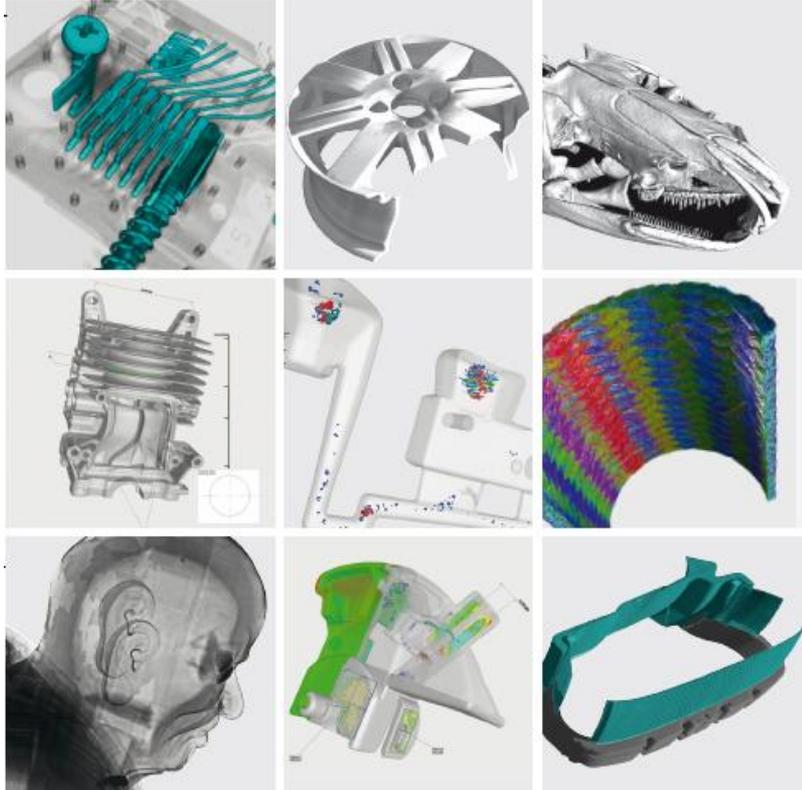
- Deepening of the BASIC training
- Backgrounds to the physical understanding
- Tips and Tricks for additional system options

PREMIUM:

- Support directly on site at the customer
- Individual exploration of the best system set-up for your inspection processes with our experts



YXLON Inspection Services



- Project planning of your specific testing solutions and inspection procedures
- Application technology support during data preparation and analysis
- Initial sampling of your inspection items
- Support during workload peaks and capacity bottlenecks
- Inspection of high-density and oversized inspection items via linear accelerator
- Dimensional metrology of interior structures and inspection characteristics
- Support and advisory consulting when implementing tool corrections
- Customer-specific workshops and seminars

Thank you for your attention.

