

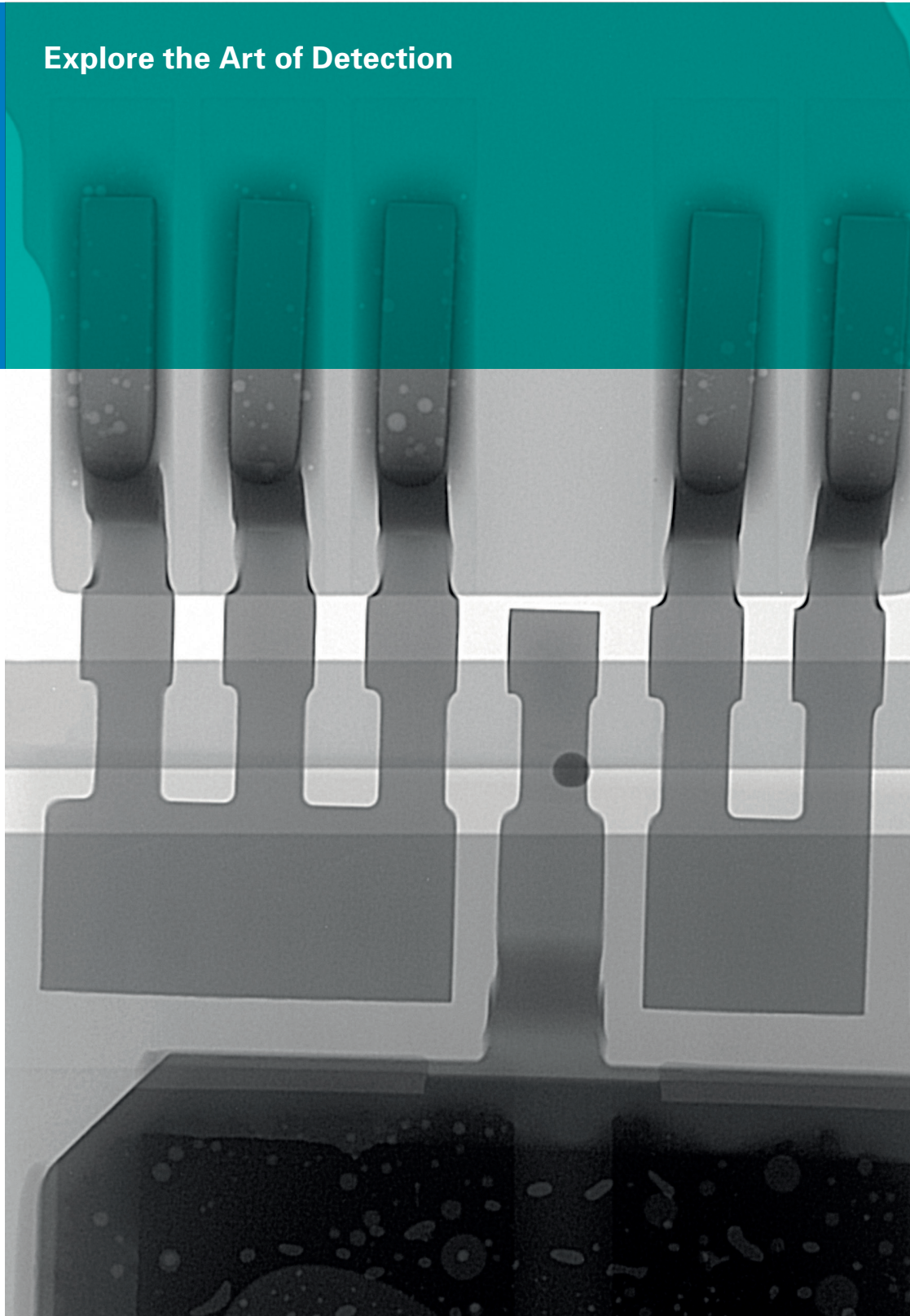
# Y.Cougar

Microfocus and nanofocus X-ray inspection systems  
for the electronics industries

**Explore the Art of Detection**



**YXLON**  
Technology with Passion







# Our specialty: The Art of Detection.

**Developing outstanding X-ray inspection processes is high art – and the task of the avant-garde. Now the avant-garde has a name: YXLON.**

As the world's leading creator of industrial X-ray systems, YXLON is uniquely qualified to raise the inspection process to unprecedented levels of quality. The increasing complexity of the electrical and electronic components we inspect is matched by the reliability of Y.Cougar – and the brilliance of the images we produce. Made in Germany to the highest possible standards, our work delivers precisely what our clients require: accuracy, flexibility, simplicity, and speed.

A close partner of the electronics industry, we continue to innovate where it matters most. Even the most critical observers agree: Produced by tried-and-tested technologies and pioneering microfocus solutions like FeinFocus, our images are world-class.

A comprehensive global network of no less than eight service centers and 50 service partners is the foundation of our innovative and modular service solutions. From Asia to Africa and America to Europe, highly qualified service personnel are on call to help YXLON clients – quickly, efficiently, and at minimum cost.



## Our philosophy: The best image in shortest time.

To achieve this ambitious goal, YXLON created the Y.Cougar microfocus and nanofocus X-ray inspection system. And the result is nothing but sheer visual brilliance. The small-sized and affordable Y.Cougar utilizes the combined power of several YXLON innovations – FeinFocus X-ray tube technology; High Power Target technology, and a finely calibrated, long-life flat-panel detector. The assortment of trays ensures that it can generate 2D and 3D images in extremely high resolution. But imaging excellence is not the only attribute Y.Cougar operators can look forward to.

Simple, user-friendly controls and FGUI – Feinfocus Graphical User Interface – software are first-class features, not to mention the myriad benefits of comprehensive automation. One-click solutions make manual inspections effortless, while Easy Teach-In simplifies programming the automated procedures that guide the operator swiftly through inspections – and deliver repeatable and reliable results. Other key features guarantee thorough inspection processes as well as easily understandable readouts.

### Applications

- Printed circuit boards
- Electronic and mechanical modules
- Electromechanical components and plugs
- Semiconductor packaging and interconnects
- Microsystems
- Sensors
- Actuators
- MEMS and MOEMS





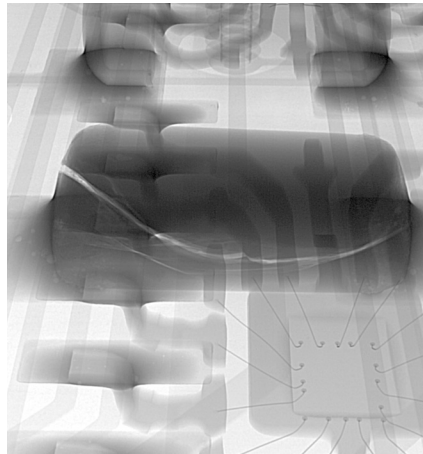
# Our strong suit: Powerful usability.

The 3.9 version of Y.Cougar includes several new features that make inspection processes even simpler and more efficient.

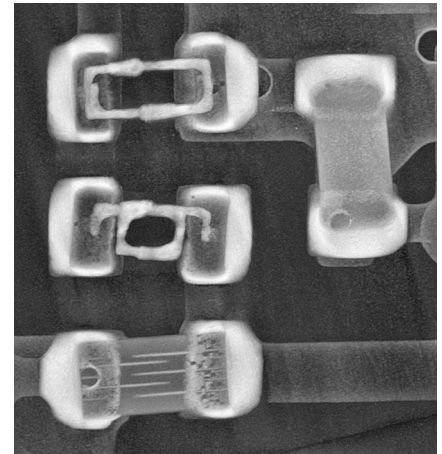




Copper wire vs. Gold wire – eHDR



Popped passive Component – eHDR

Passive components –  $\mu$ 3Ds

## Simplified. Enhanced. Upgradable.

One-click solutions make it easy to perform the advanced manipulations required for fast and reliable X-ray inspection. For example, Click & Center or Frame & Zoom can be performed with one simple action. But easy operation is

worth little without results of the required standard. Which is why YXLON upgraded a number of trademark Y.Cougar features – while ensuring that it remains the best device in its class:

### ■ Extended BGA Inspection

Select and index individual balls, either manually or using automatic grid detection. A user wizard guides the operator step-by-step through the workflow.

### ■ Extended ADR Interface

Y.Cougar software can be tailored to individual requirements, with operators free to define their own specific analysis. This also includes customized algorithms.

### ■ AXI Barcode Management

Now every inspection sample can be traced separately via barcode. Which means every result in the final report can be traced as well.

### ■ AVI Recorder

With the integrated AVI recorder, operators can produce a live documentation of the inspection process.

## Upgrade to CT.

Moreover, Y.Cougar can be upgraded for CT with the optional microCT module. This enables CT for industrial quality assurance, with in-depth 3D examination of inspection items

via virtual cross sections and layers. With its user-friendly Y.QuickScan® software and intuitive handling, the module delivers 3D images and virtual slices within a minute.



# Our technique: Faster and more precise.

In addition to enhancements to established features, Y.Cougar operators also benefit from three completely new technologies.

## **eHDR-Inspect**

Highest product quality is a major competitive advantage in electronics. Developed especially for the electronics market, our eHDR filter highlights critical structures with just one click. It detects even the slightest variances and no defect will be missed – thanks to enhanced 16-bit illustration of grayscale values.

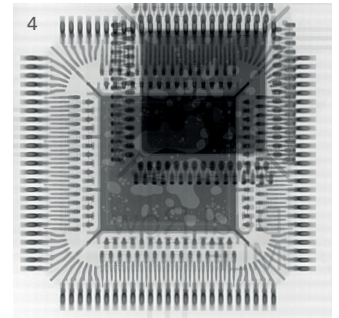
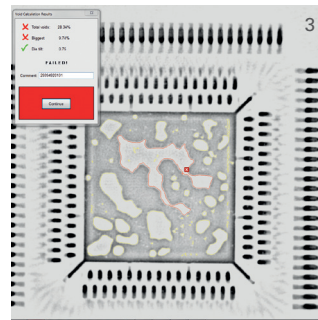
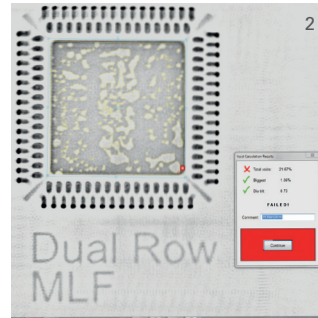
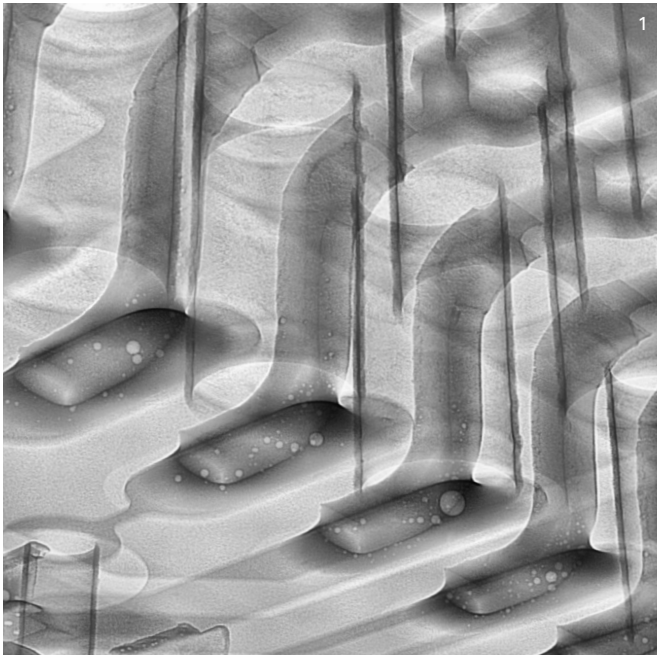
## **micro3D slices SMT**

A cost-effective inspection is one of the main factors when it comes to reducing overall product costs. By using laminography slicing technology, the nondestructive inspection of larger or double-sided boards as well as multilayer chips is possible and substantial cost savings will be achieved. Even better, these slice-by-slice images can be analyzed automatically – as easily and quickly as a 2D image.

## **Multi Area Void Calculation (MAVC)**

Today's soldering connections are getting more and more complex. That leads to high risk of missing solder joints which could result in ultimate product failures. The MAVC helps detect voids in complex soldering designs. With just four parameters to adjust, setup is quick, simple, and cost-efficient.





- 1 Squalid Solder connection – eHDR
- 2 Die attach VC (top layer) –  $\mu$ 3Ds SMT
- 3 Die attach VC (bottom layer) –  $\mu$ 3Ds SMT
- 4 Double-sided board – X-ray image

## Our record: Brilliance by numbers.

### General Product Features

Time to first image (typ.)	~ 10 s
Reconfiguration time (typ.)	< 60 s
$\mu$ CT scan time (min.)	8 s
$\mu$ CT reconstruction time (min.)	~ 60 s
$\mu$ 3Ds scan time (min.)	~ 20 s
$\mu$ 3Ds reconstruction time (min.)	~ 20 s
Image chain	16 bit, FPD
CNC	yes, incl. Click & Center etc.
Twin magnification axis	yes, for Zt and Zd positioning
Oblique viewing	+/-70° (140°)

### Manipulation

Manipulation control via	mouse or joystick
Inspection area (max.)	310 mm x 310 mm (12" x 12")
Sample size (max.)	440 mm x 550 mm (17" x 21")
Sample tray axes	X, Y
Oblique viewing	+/-70° (140°)
CNC	yes

### X-Ray Tube

Tube type	open X-ray tube
Target	transmissive
Target material	Tungsten
Voltage range	25–160 kV
Current range	0.01–1.0 mA
Max. tube power	64 W
Max. target power	15 W
Detail detectability	<1 $\mu$ m, <350 nm with MFT
X-ray intensity control	TXI

### Image Chain

Geometric magnification (max.)	2,000x
Total magnification (max.)	17,500x

### Physical Dimensions

Width / depth / height	~ 1,100 / 1,100 / 2,100 mm
Weight	~ 1,450 kg

**Find the system  
that suits you best**



Y.Cougar Basic



Y.Cougar



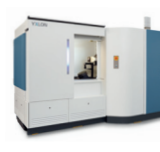
Y.Cheetah



Y.Cheetah µHD



FF 20CT



FF 35CT

	Y.Cougar Basic	Y.Cougar	Y.Cheetah	Y.Cheetah µHD	FF 20CT	FF 35CT
Part size	+	+	++	++	+++	++++
Material density	++	++	++	++	+++	++++
Part weight	+	+	++	++	+++	++++
Detail detectibility	+	+	+	++	+++	++++
Vertical beam inspection	+++	+++	+++	+++		
horizontal beam inspection					+++	+++
Stone based Manipulation					+++	+++
Real time imaging	++++	++++	++++	++++	++	++
microCT		++*	+++*	+++*	++++	++++
micro3Dslices		++*	+++*	+++*		
microHelical CT					+++*	++++*
virtual ROI CT					+++*	+++*
Smart GUI	+++	+++	+++	+++	++++	++++
*optional						

Would you like to learn more about our systems? Interested in a test inspection?  
Please don't hesitate to contact us by phone or email. We look forward to hearing from you!

**YXLON**

Technology with Passion

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