Led by experience. Driven by curiosity.

UX20

Easier and faster X-ray and CT inspection of cast parts.

LEAP AWARDS Winner

inspect award 2021 winner

comet UX20
yxlon

comet
yxlon

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!

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.**

UX20 compact inspection system with large inspection envelope for 2D and 3D results in record time.

UX20: designed for your success.

- Intuitive operation
- Fast results in 2D and 3D
- Optional 225 kV MesoFocus tube
- "Casting Insights" software packages for automated defect recognition (ADR)
- Vista software packages for best-in-class image quality and speed
- Compact footprint
- Robust design

Best image quality.
Fast and easy.

Due to the transformation to electric mobility, foundries are increasingly producing larger and more complex components. More than ever, efficient processes are crucial.

Which parts can be inspected with the UX20?

Automotive and aerospace castings

Welded structures

Electromechanical parts

Multi-material components

Additive manufactured parts

Special alloys

Plastics

Ceramics

Which applications is it designed for?

Quality assurance and material analyses

Failure analyses e.g. flaws, porosities, cracks, inclusions

Assembly checking

Measurements of inner structures

Inspection of small serial productions

Process control

Based on the needs of our customers, we designed the UX20 system for fast and easy X-ray inspection, be it manual or automatic. Users benefit from our decades of experience in X-ray technology and proven 2D live image enhancement filters such as Comet Yxlon HDR-Inspect.

Intuitive user interface

Making professional 2D and 3D inspections as intuitive as possible, even for occasional operators, is the aim of our award-winning Geminy user interface. Automation, wizards and presets guide the user, leading to more efficient workflows.
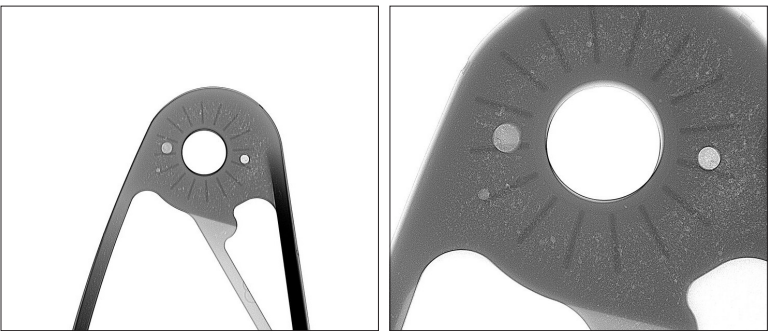
Benchmark image quality

The optimized image chain of the UX20 enables any operator to make consistent inspection decisions. A selection of compatible X-ray tubes, detectors and image processing tools ensure image quality that sets standards.

Maintenance made simple

For operation in harsh industrial environments, the cooler and generator are protected inside the system. Uncomplicated maintenance is carried out via access points on two sides, and the cooler can be easily pulled out of the cabinet on two rails.

High resolution.
Low maintenance.
MesoFocus.

New technologies like additive manufacturing and the miniaturization of parts ask for highest resolution. With its three selectable focal spots for optimum spatial resolution on the one hand and the robust design of a sealed tube on the other, the optional MesoFocus tube is the perfect fit for tough environments – and can be handled successfully even by inexperienced operators.

2D digital radioscopy of a side mirror with mini-focus tube 225 kV (left) and MesoFocus 225 kV (right), both filtered.
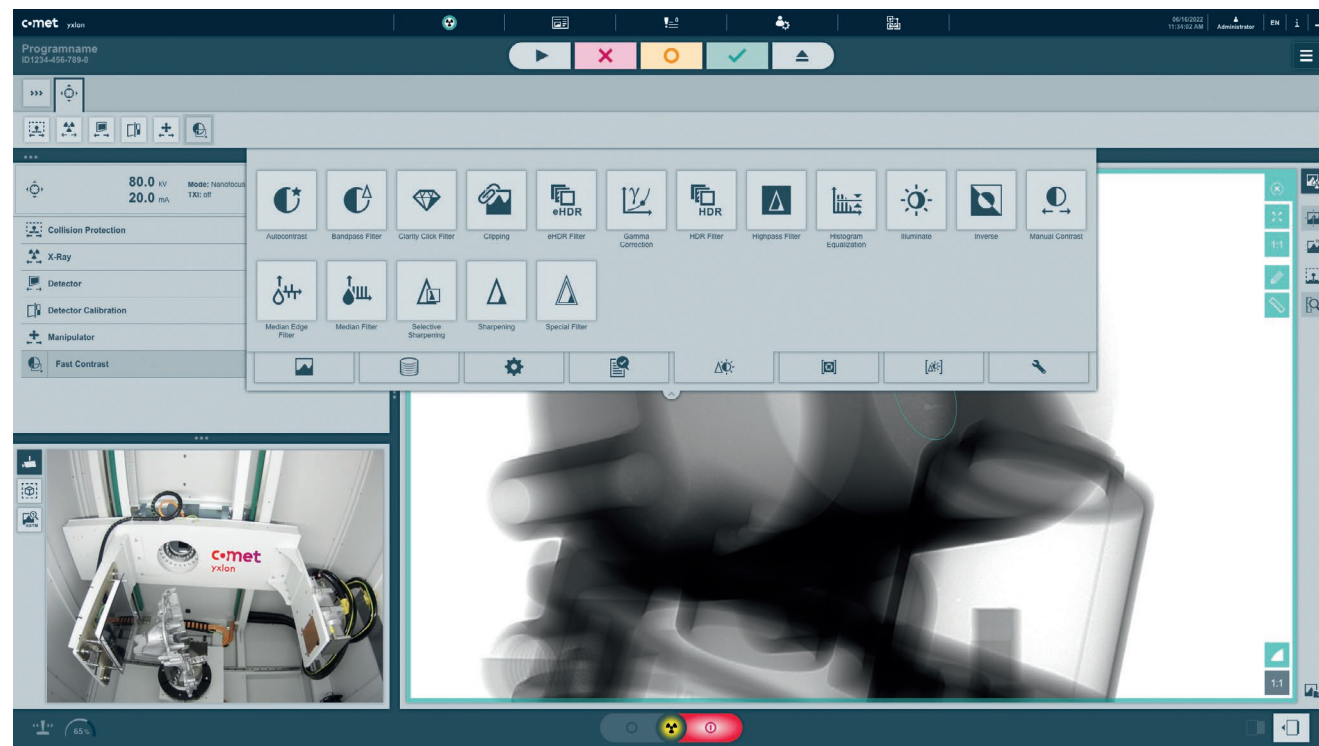
Accessible,
ergonomic design.

No distractions: The clean layout of the operator desk allows operators to stay focused on the inspection task. The height of the desk can be adjusted, facilitating operation from a sitting or standing position.

Geminy.

One user interface for all tasks.

No wonder that Geminy won an award for excellence in human-machine-interface design: Comet Yxlon's smart software helps users get inspections done as easily as possible.

From the daily operator working with presets and predefined workflows to the expert who puts these in place: as the overarching user interface for all workflows, Geminy accommodates users with different levels of expertise.

Automatic inspections with "Casting Insights"

Casting Insights with its two additional support packages is built around our field-proven automated defect recognition (ADR) software TrueInspect. It enables reliable, fast, and user-independent inspection decisions, in compliance with automotive requirements.

System performance at a glance

Operators can quickly analyze the system's condition with one look at the Healthmonitor. In addition, performance checks can be made any time via automatic workflows.
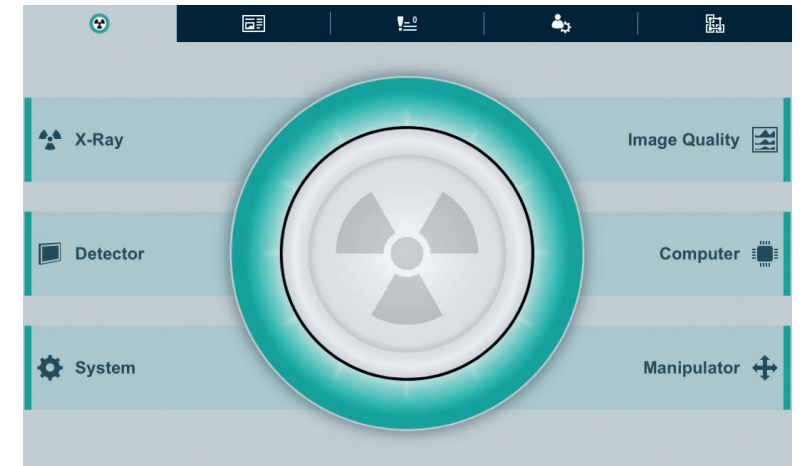
Multi-part inspection

The optional multi-part holder allows you to save time by loading several parts at the same time and inspecting them in one inspection sequence. The inspection decision for each part is clearly shown in the Geminy GUI.

Keeping track with part ID and part type

Thanks to track & trace capabilities the ID/serial number of parts can be added to the inspection data and reports manually or via barcode scanner.

Simple sharing

Save time and effort in providing 2D and 3D inspection data like images and reports where needed. Via a defined interface, selected data can be automatically transferred from the test system to the customer network for further processing.

Geminy's Healthmonitor shows the current system condition.

Multi-part inspection for maximum efficiency.

Clever additions to smart systems.
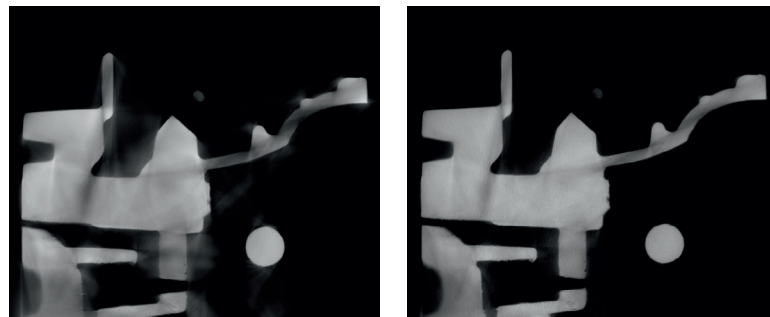
Computed tomography

Adopted from our high-precision CT inspection systems such as the FF35 CT, the UX20 is also equipped with a range of impressive CT features. With ScanExtend, the wizard guides you to set up various scan-field extensions to scan even the largest parts in the system. With FlexCenter, difficult parts or regions of interest can be set up quickly, enabling you to get your task done in minimum time.

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.

Optimized surface determination with ScatterFix 2.0

The innovative ScatterFix 2.0 functionality developed by Comet Yxlon reduces parasitic scattered radiation and thus 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.

Disruptive scattered radiation (left) is successfully reduced with Scatterfix 2.0 during or after the scan for optimal surface evaluation (right).

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*.

* 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!

The UX20 in numbers.

Cabinet

	160 kV	225 kV
Width	2,550 mm	
Depth[1]	1,870 mm	
Height	2,365 mm (2,145 mm transport)	
Weight	4,300 kg	5,300 kg
Mains connection	230 V ±10%, 50/60 Hz, 1N PE	
Power consumption, maximum	3.8 kVA	

[1] Cabinet only, add 955 mm for operator console

Manipulator

Maximum part weight	100 kg
Tilt angle, oblique[1]	±55 °
Turntable, Ø [2]	300 mm
Loading door clearance, width x height	840 x 1,625 mm

[1] Maximum angle on detector flat-panel detector 4343DXi   [2] Optional 600 mm t-slot turntable

Inspection envelope & X-ray detector

	Flat-panel detector 2323HB	Flat-panel detector 4343DXi
Active area	230 x 230 mm	430 x 430 mm
Pixel pitch	179 µm	139 µm
Focus-detector distance (FDD)	900 mm	1,150 mm
Part size, max.	Ø 710 x 1,090 mm height	Ø 830 x 1,100 mm height
Inspection envelope 2D	Ø 710 x 1,090 mm height	Ø 800 x 1,100 mm height
Inspection envelope basic CT	Ø 190 x 165 mm height	Ø 340 x 280 mm height
Inspection envelope extended CT[1][2]	Ø 315 x 1,085 mm height	Ø 540 x 1,100 mm height

[1] Requires professional analysis PC   [2] Artefacts between horizontal scans of a few mm are normal

X-ray source

	Mini-focus tube	Mini-focus tube	Mini-focus tube	MesoFocus tube
Energy, max.	160 kV	160 kV	225 kV	225 kV
Power, max.	800/1,800 W	640/640 W	800/1,800 W	50/130/200 W
Focal spot size	0.4/1 mm[1]	1/1 mm[1]	0.4/1 mm[1]	50/130/200 µm[2]

[1] According to EN12543   [2] According to ASTM E1165-12

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