

Led by experience. Driven by curiosity.

# UX20

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



inspect  
award 2021  
winner



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.

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

## UX20: designed for your success.

- Intuitive operation with Gemini
- Benchmark image quality
- Fast results in 2D and 3D
- 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
- 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

With the UX20, Comet Yxlon offers a standard system that facilitates fast and highly efficient inspections thanks to easy, intuitive operation. Its exceptional inspection envelope allows for 2D and 3D results in record time.

**Intuitive user interface**

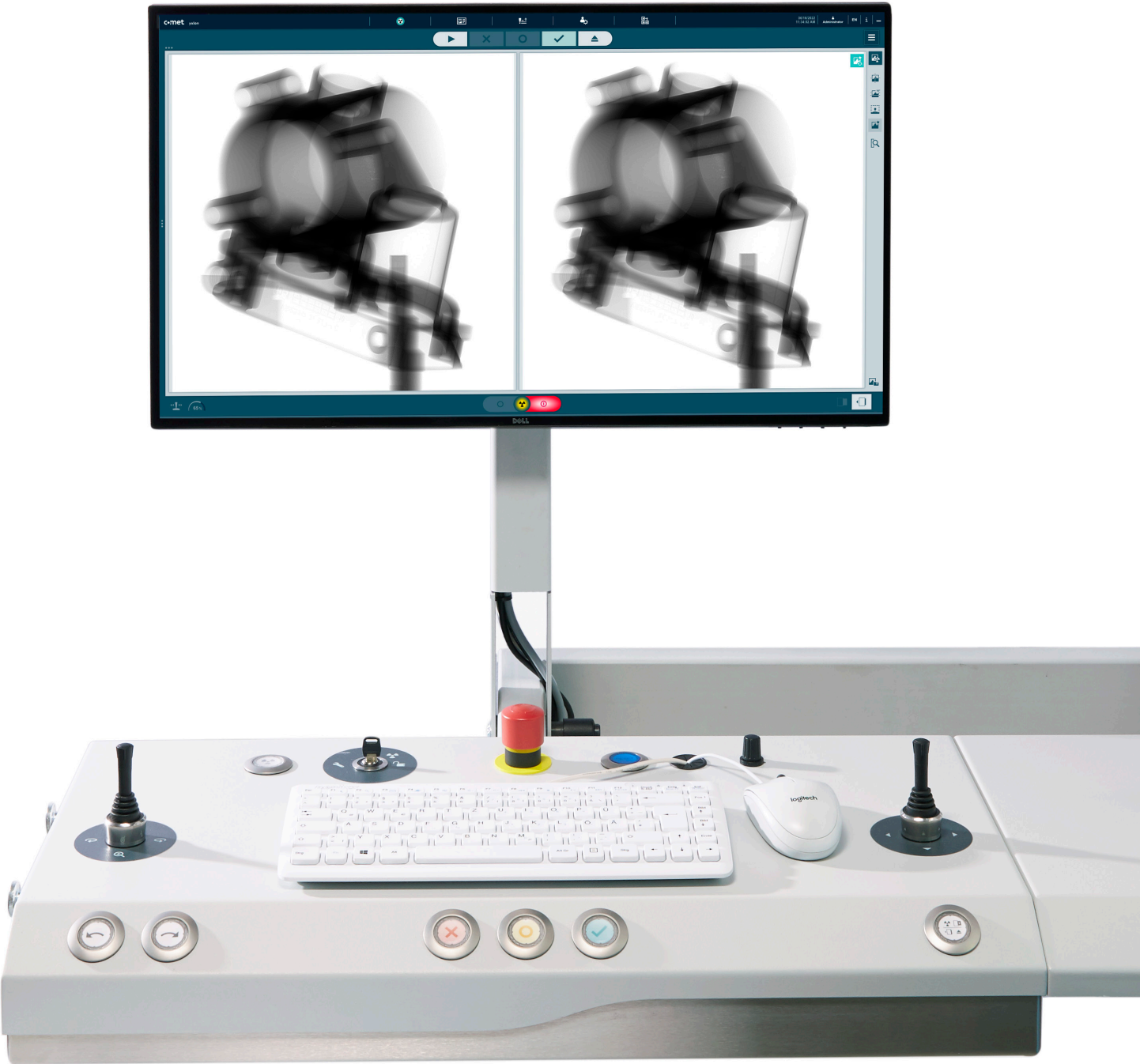
Making professional 2D and 3D inspections as intuitive as possible, even for occasional operators, is the aim of our award-winning Gemini user interface. Automation, wizards and presets guide the user, leading to more efficient workflows.

**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**

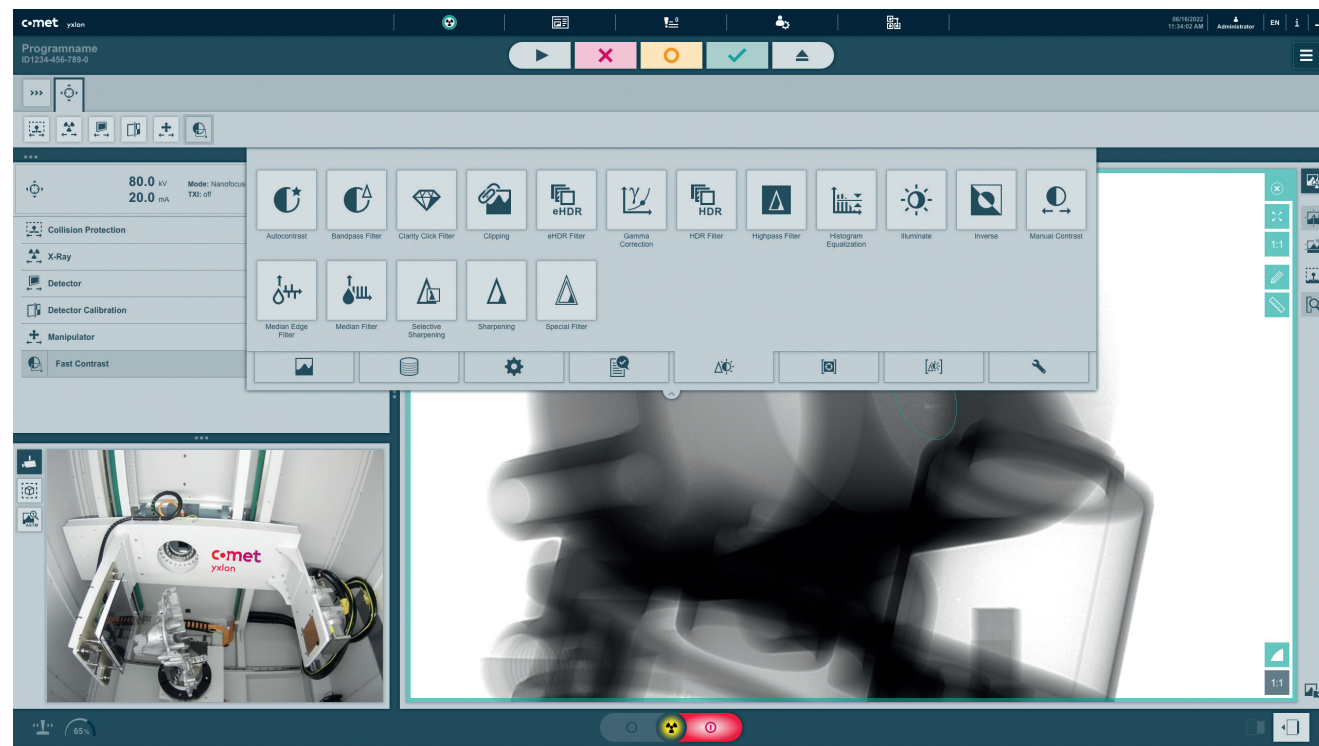
For operation in harsh industrial environments, the cooler and generator are protected inside the system. Uncomplicated maintenance is carried out via access points on two sides, and the cooler can be easily pulled out of the cabinet on two rails.



**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.

## Easy to use, powerful performance

Based on the needs of our customers, we designed the UX20 system for fast and easy X-ray inspection, be it manual or automatic. SmartGuard, a Geminy software wizard, helps to safely generate highly detailed images without the risk of collision. Users benefit from our decades of experience in X-ray technology and proven 2D live image enhancement filters such as Comet Yxlon HDR-Inspect.

## 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

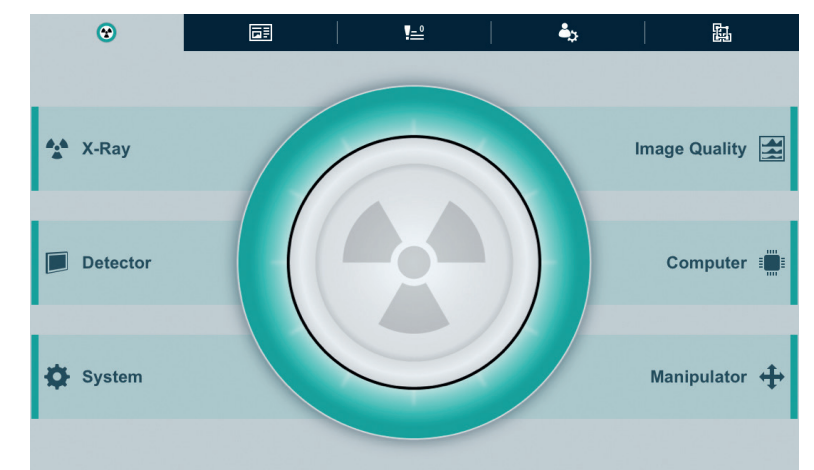
Save time and effort in providing 2D and 3D inspection data like images and reports where needed. Via a defined interface, selected data can be automatically transferred from the test system to the customer network for further processing.

## At a glance: system performance

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



Side mirror X-ray image with optimized settings for manual 2D inspection.



Geminy's Healthmonitor shows the current system condition.



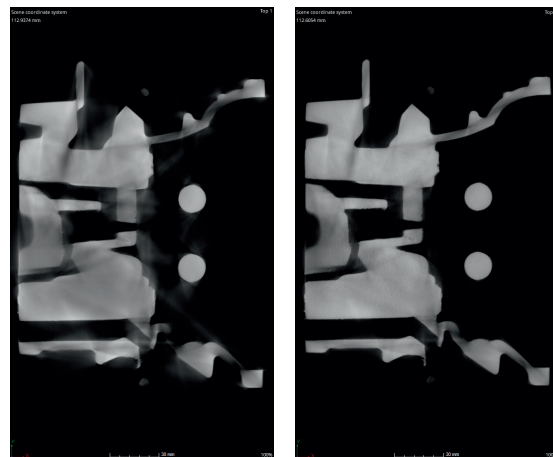
# Clever additions to smart systems.

## Computed tomography

Adopted from our high-precision CT inspection systems such as the Comet Yxlon FF35 CT, the UX20 is also equipped with a range of 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.

## 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).

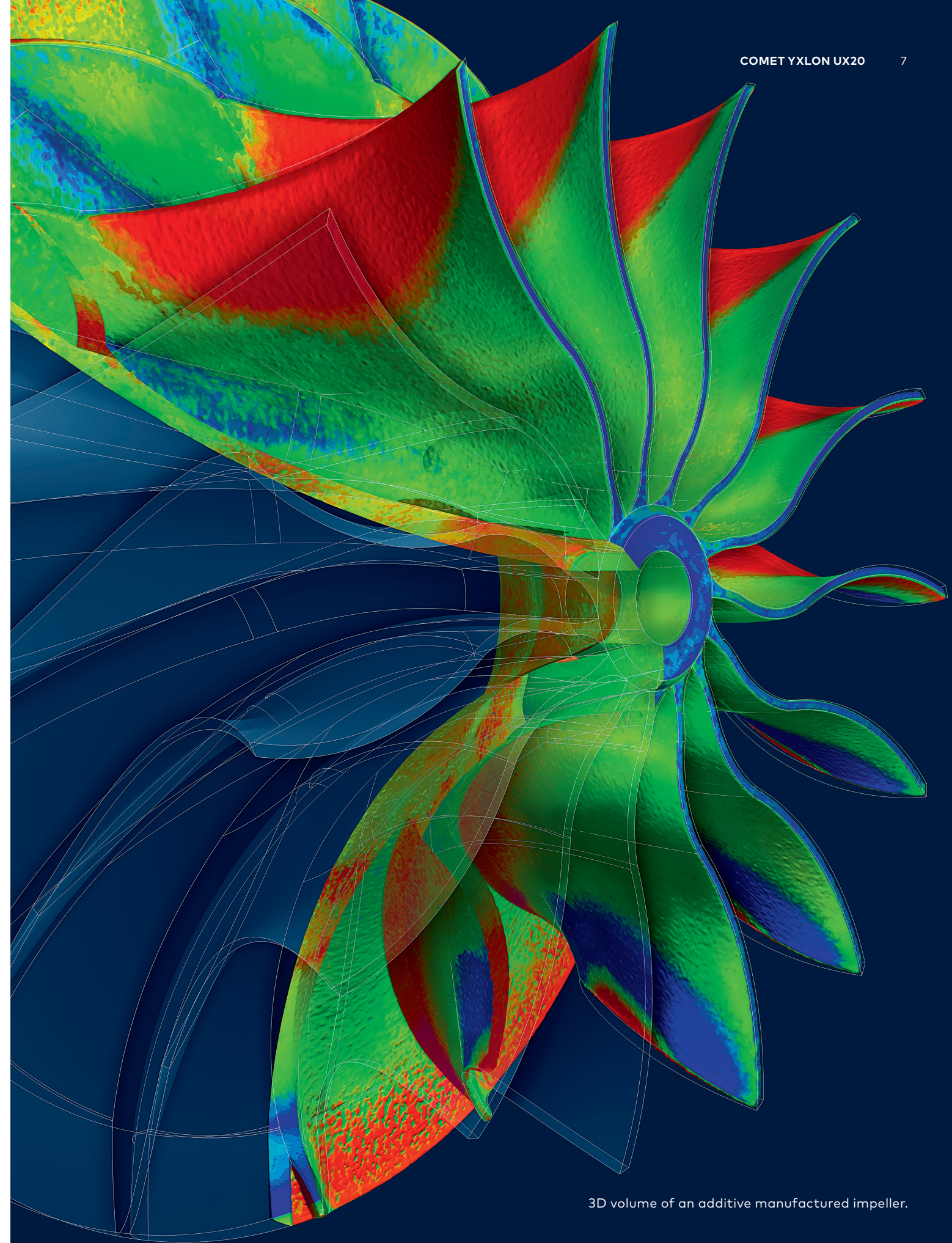
## High resolution. Low maintenance. MesoFocus.

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.

It is particularly low-maintenance and easy to operate even by inexperienced users.

## Serving a wide variety of applications

- Automotive and aerospace castings
- Composites
- Electromechanical parts
- Weldings
- Additive manufactured (AM) parts with small defects, like flaws



3D volume of an additive manufactured impeller.



# Service Engine 4.0: taking customer care to the next level.

First-class technical problem solving combined with high economic efficiency – that’s what we call Service Engine 4.0. It drives our service, processes and partners to detect and correct failures quickly and reliably by remote access and during on-site visits. Feel free to contact our service centers and partners world-wide by phone, e-mail or via our website.

### Your benefits with Service Engine 4.0

- 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 with performance and feature upgrades enables you to adapt to future requirements and safeguard your initial investment by extending the product lifetime. Service Engine 4.0 does not only provide fast support now, but is predictive of your future needs.

### The Comet 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 Comet 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 Comet Yxlon system portfolio

# The UX20 in numbers.

Cabinet	160 kV	225 kV
Width	2,550 mm	
Depth <sup>1)</sup>	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	

<sup>1)</sup> Cabinet only, add 955 mm for operator console

### Manipulator

Maximum part weight	100 kg
Tilt angle, oblique <sup>1)</sup>	±55 °
Turntable, Ø <sup>2)</sup>	300 mm
Loading door clearance, width x height	840 x 1,625 mm

<sup>1)</sup> Maximum angle on detector Y.Panel 4343DXi    <sup>2)</sup> Optional 600 mm t-slot turntable

Inspection envelope & X-ray detector	Y.Panel 2323HB	Y.Panel 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, maximum	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 <sup>1)2)</sup>	Ø 315 x 1,085 mm height	Ø 540 x 1,100 mm height

<sup>1)</sup> Requires professional analysis PC    <sup>2)</sup> Artefacts between horizontal scans of a few mm are normal

X-ray source	Y.TU160-D06	Y.TU160-D04	Y.TU225-D04	Y.TU225-M01
Energy, maximum	160 kV	160 kV	225 kV	225 kV
Power, maximum	800/1,800 W	640/640 W	800/1,800 W	50/130/200 W
Focal spot size	0.4/1 mm <sup>1)</sup>	1/1 mm <sup>1)</sup>	0,4/1 mm <sup>1)</sup>	50/130/200 µm <sup>2)</sup>

<sup>1)</sup> According to EN12543    <sup>2)</sup> According to ASTM E1165-12



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