PRODUCT PRESENTATION
UX20 x-ray inspection system

YXLON
Technology with Passion

PRODUCT PRESENTATION

UX20

YXLON
Technology with Passion

UX20 – In A Nutshell

- Easy-to-use Geminy software with different user levels and presets daily operators

- Carefree manipulation with easy crash protection

- Ergonomic operation with operator panel adjustable for height

- Innovative one button safety concept

- Large inspection envelope for DR and CT

- Maximum inspection size: 800 x 1110 mm* (DR)

- Choice of different detectors (easily upgradable)

- Fixed tube collimator

- Compact footprint

- Commissioning in less than a day

* with Y.Panel 4343DXi

YXLON
Technology with Passion

UX20 – Technical Data

|	160 / 225 kV			160 / 225 kV
System dimensions (w x d x h in mm) w/o operator panel	2250 x 1770 x 2350		FDD (Focus-Detector-Distance) fixed approx. in mm	900/1150
System weight approx.	4,3 t / 5,3 t		Oblique View	+/- 55°*
Maximum part weight	100 kg		Part holder	Universal carbon three jaw chuck
Detectors	Y.Panel 2323HB DRZ$^+$	Y.Panel 4343DX-I DRZ$^+$	Automatic system performance checks	ASTM E1695 SD check referring to VDI 2630 1.3
Maximum part size (d x h in mm)	710 x 1090	830 x 1100	ASTM reference images	yes
Inspection envelope 2D	710 x 1090	800 x 1100	Accessibility	Front and only one side
Inspection envelope 3D Std. (d x h in mm)	190 x 165	340 x 280	X-ray component integration in system	Yes
Inspection envelope 3D Extended (d x h in mm)	ø 315 x 1085	ø 540 x 1100		* maximum value, 45° in central beam

YXLON
Technology with Passion

UX20 – Convenient Operation

- Ergonomic operation with operator desk adjustable in height

- Clean and simple layout of the operator desk lets you focus on the inspection task

- Turntable moves to convenient loading and unloading position for the heavier parts

- Shelf for accessories inside the cabinet e.g. for beam blocker, beam filters

YXLON
Technology with Passion

UX20 – Floorplan
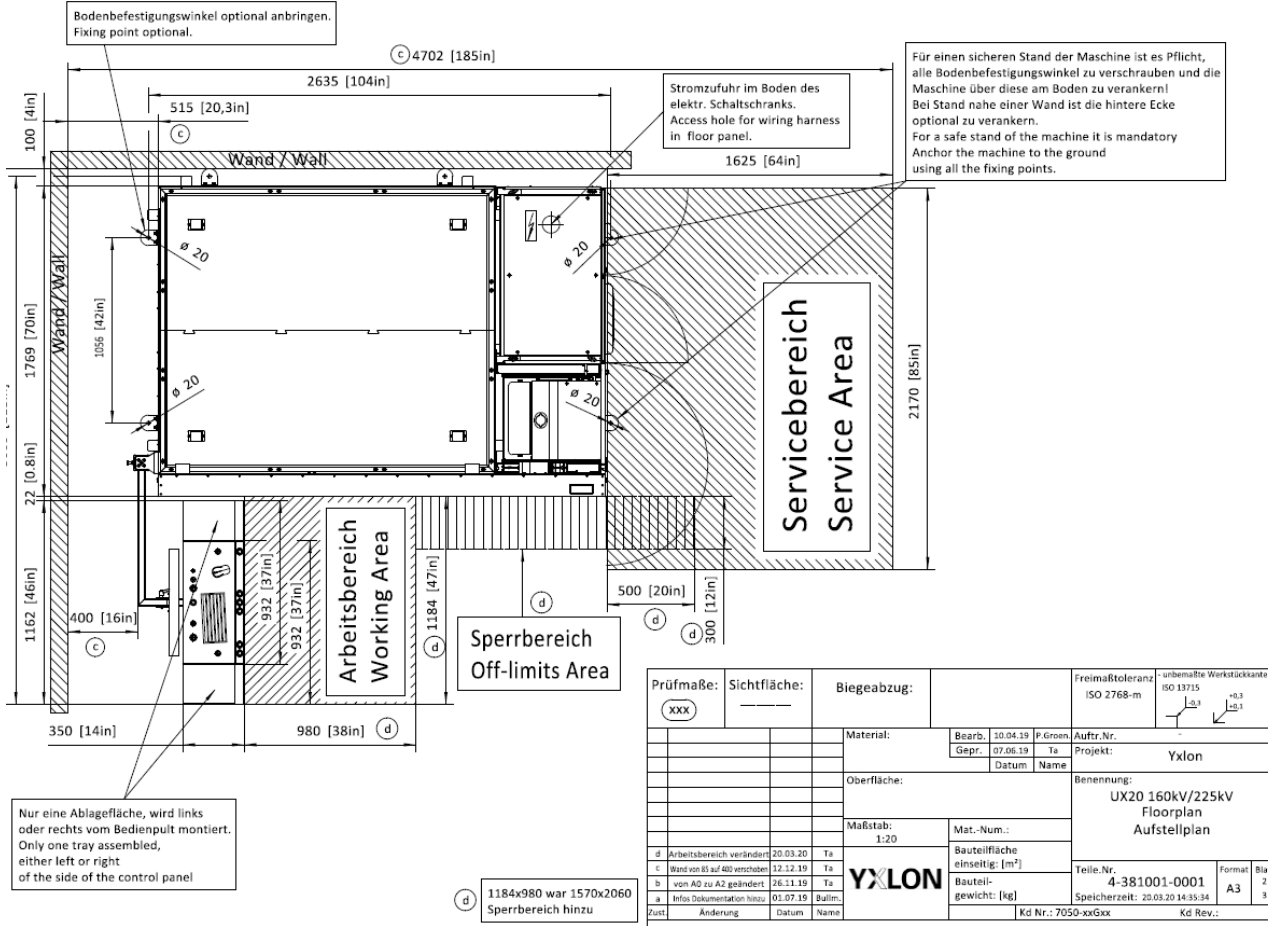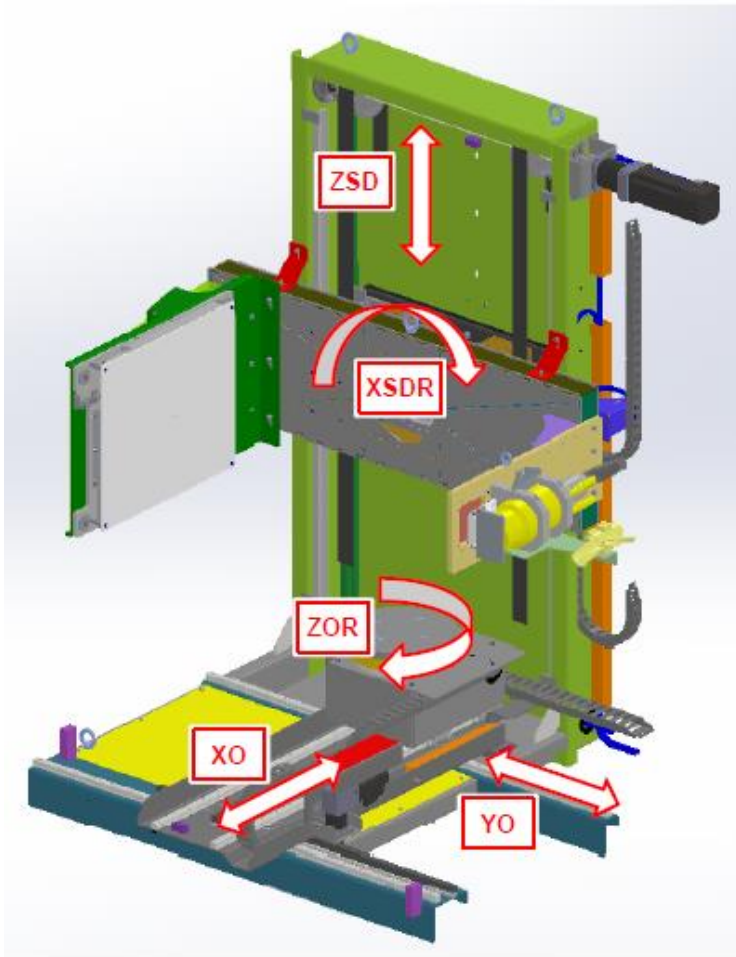

- Compact footprint; can be placed in a corner
- Access only from two sides necessary
- No components below or besides the cabinet

YXLON
Technology with Passion

UX20 Manipulator Overview

Manipulator

- XO test object (front-back)

- YO test object horizontal (left-right, magnification axis)

- XSDR (detector/tube tilting)

- ZSD (detector/tube vertical)

- ZOR Rotation test object

UX20 – Image Chain

Choice of various detector-tube options fitting best to your application

- 160 and 225 kV minifocus X-ray tubes

  - Y.TU160-D04,1.0/1.0 mm, 640 W for high cyclic usage, series inspection

  - Y.TU160-D06, 0.4/1.0 mm, 800/1800W, high-power tube

  - Y.TU225-D04, 0.4/1.0mm, 800W/1800W

- Y.Panel 2323HB

  - 16 bit X-ray detector

  - Active area: 229 mm x 229 mm

  - Pixel matrix 1280 x 1280 pixels and 179 µm pixel pitch

  - Frame rate adjustable up to 23 fps (1x1), framerate or up to 46 fps (2x2)

  - Scintillator DRZ[+]

- Y.Panel 4343DX-I

  - High dynamic 16 bit X-ray detector

  - Active area 432 x 432 mm

  - Pixel matrix 3072 x 3072 pixels and 139 µm pixel pitch

  - Frame rate adjustable up to 4 fps (1x1) or 15 fps (2x2), 25 fps (1x 1 zoomed)

  - Scintillator DRZ[+]
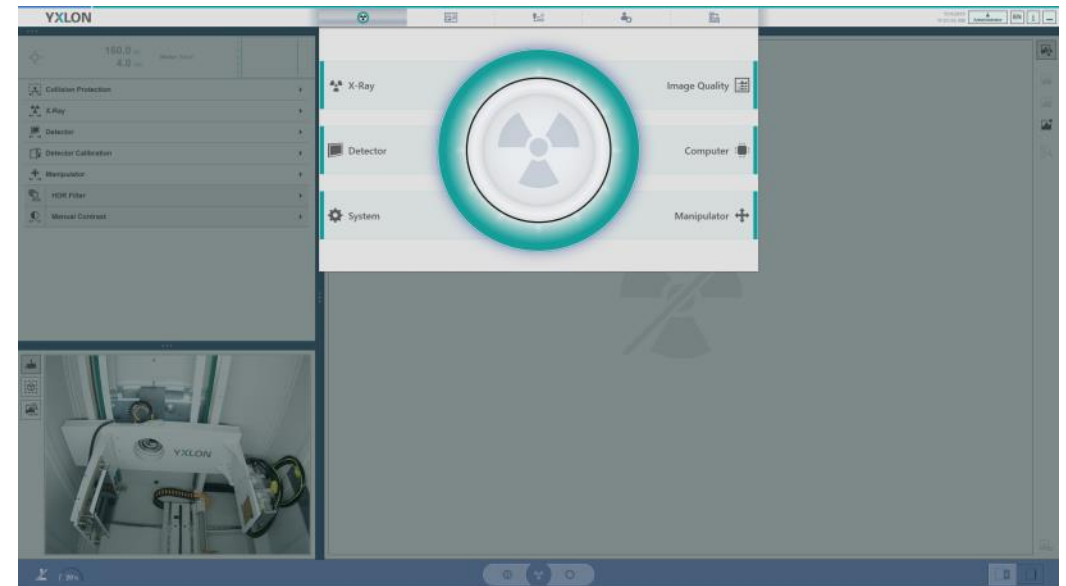
YXLON
Technology with Passion

UX20 – New, Clearly Structured GUI
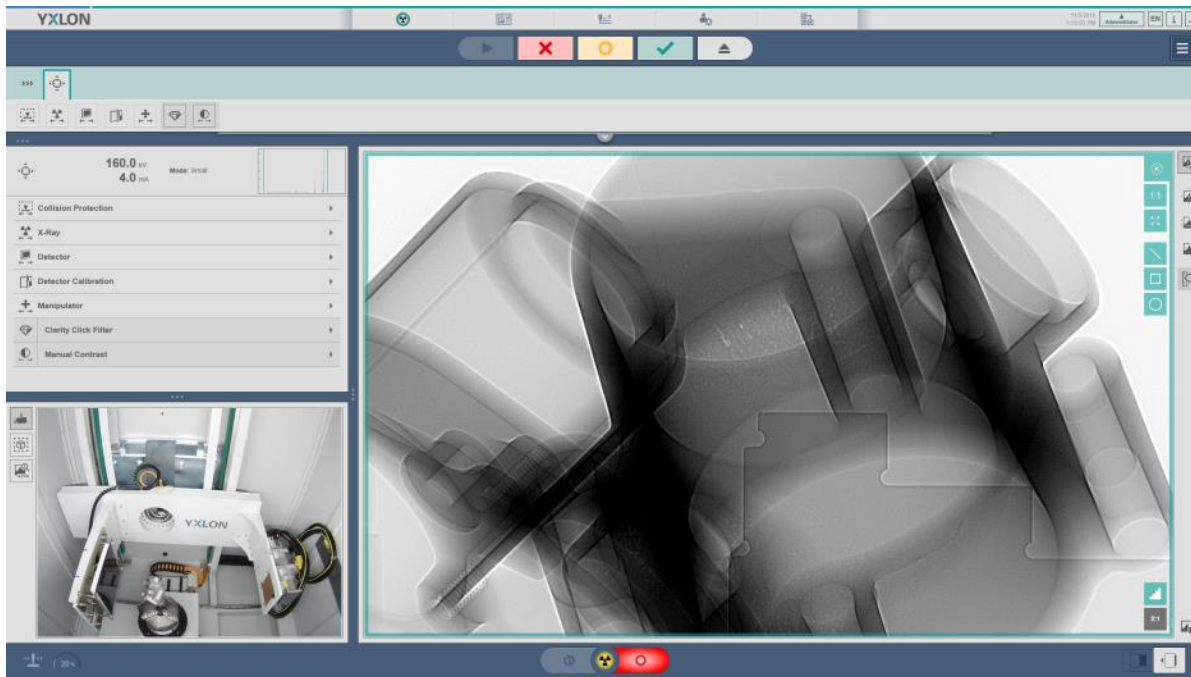
- Geminy software for machine control, DR and CT workflow
- All elements of an inspection position like tube, detector, manipulator, filters, CT, etc. are represented by intuitive graphical icons

YXLON
Technology with Passion

EASE OF USE
Operation without expert knowledge

- User management with various roles and different access rights

- Store user-specific settings for intuitive operation

- Presets for live inspection ensuring repeatable image quality

- Joysticks for manipulation and speed adjustment

- Safe manipulator operation due to crash protection (adjustable for different part sizes)

- Automatic tube warm-up (including beam blocker) and detector calibration
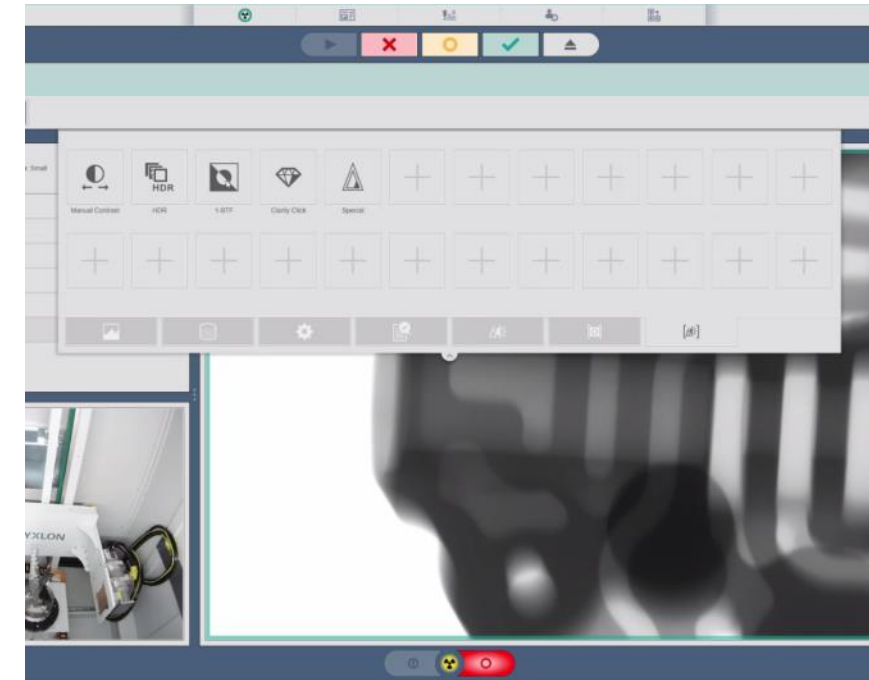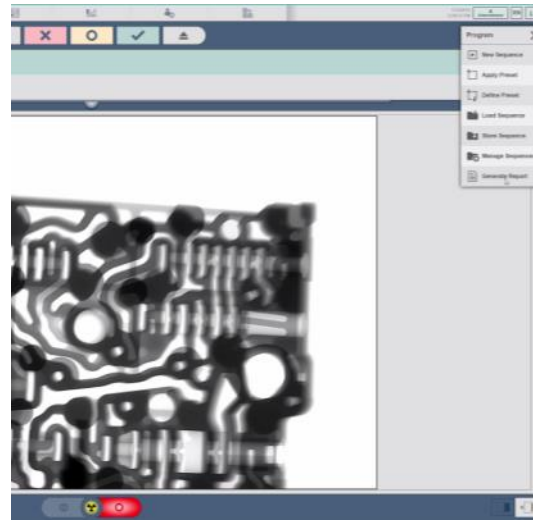
Geminy GUI

Fast Creation of Inspection Sequences in four steps

- Create an inspection sequence without mouse or keyboard
- Presets reduce training effort and allow quick start for the inspection task
- System maintenance like tube warm-up and detector calibration start automatically
- With the carbon three jaw chuck, remounting the part is not necessary

1. Place the part on the inspection holder
2. Push the button to close the door
3. Move the part with joysticks and see the live X-ray image
4. Open the door and unload the part
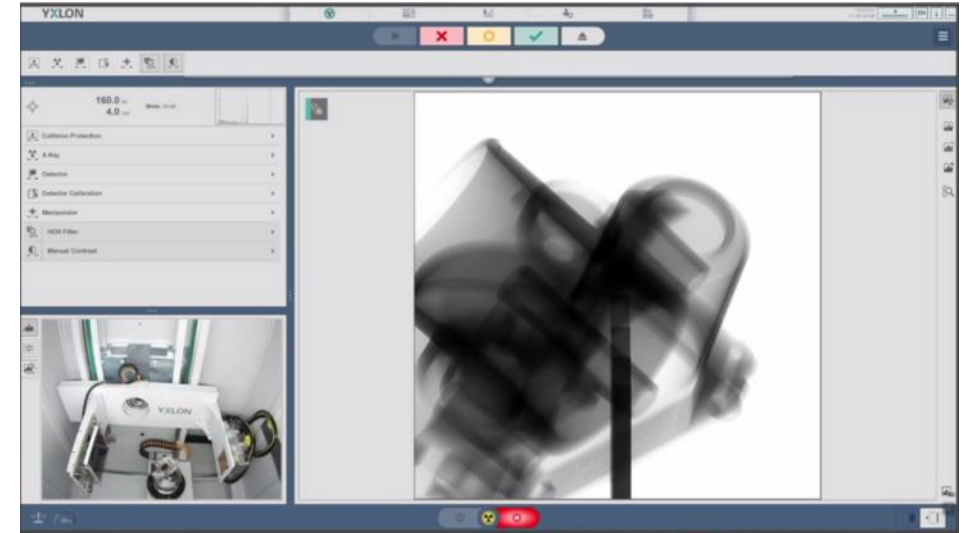
[Video available]

YXLON
Technology with Passion

User-Friendly Set-Up for CT Inspections

- One software for DR and CT inspections

- Presets available for daily operators

- Basic circular CT and quality CT

- ScanExtend to increase your scan diameter

- Wizard guides you through intuitive workflows

- Reconstruction workspace designed to support easy management of scans and reconstruction parameters

- Fast preview to quickly see the effect of filters and artefact correction
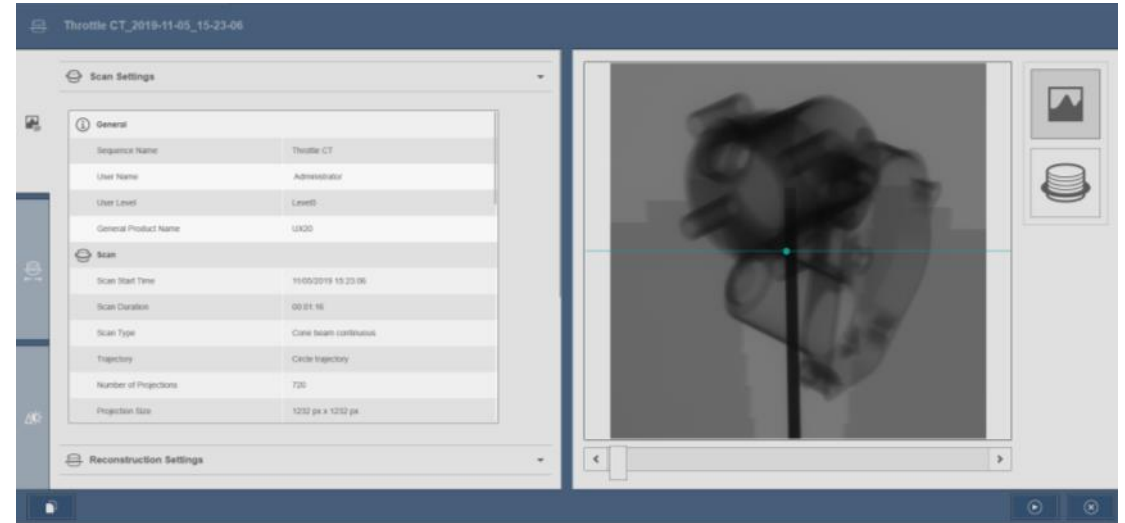
[Video available]

YXLON
Technology with Passion

CT Inspection

We offer three different CT packages all include
- Reconstruction with Siemens CERA
- Optional analysis with Volume Graphics VG Studio

1. Basic CT
- Standard circular quick and quality scan

2. Extended CT
- Horizontal and vertical field of view extension
- Requires Basic CT

3. Quality CT
- Various scan quality enhancements e.g.
  - ring artefact correction
  - multi-material beam hardening
  - metal artefact reduction
- Requires Basic CT and/or Extended CT

YXLON
Technology with Passion
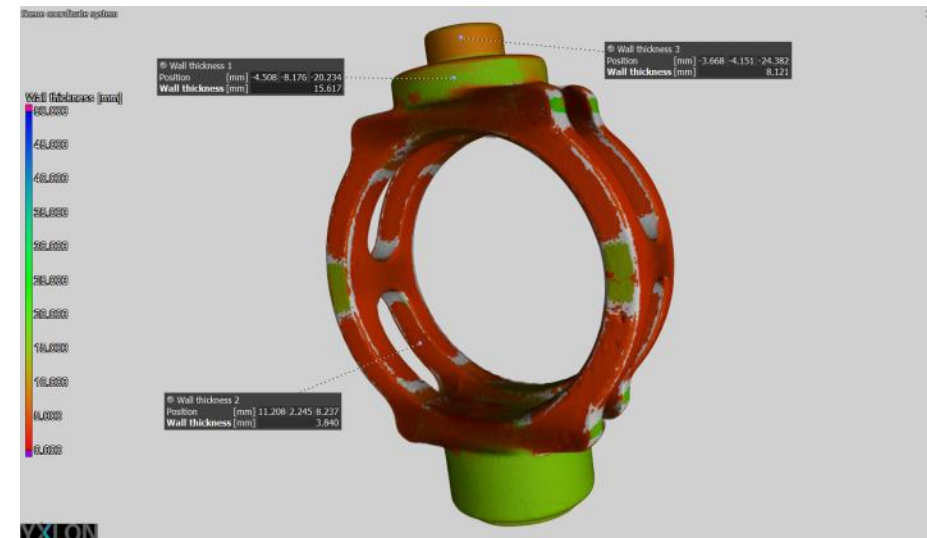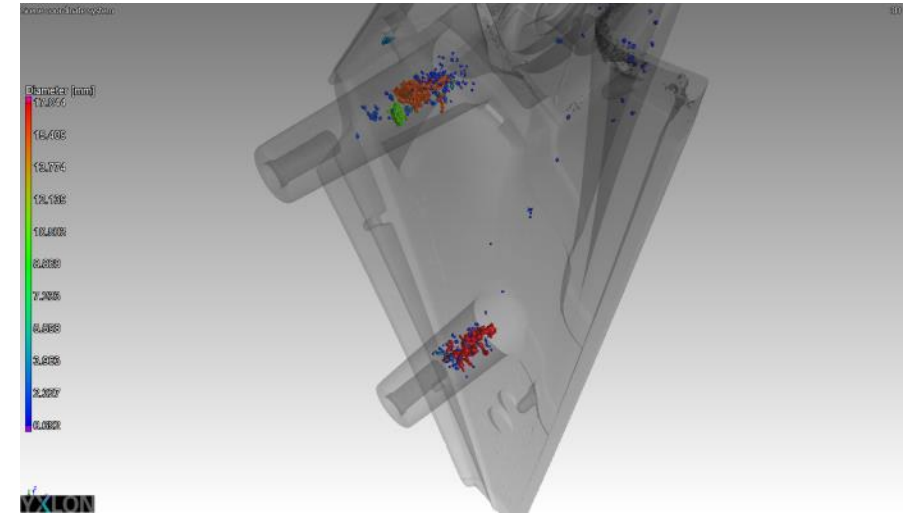
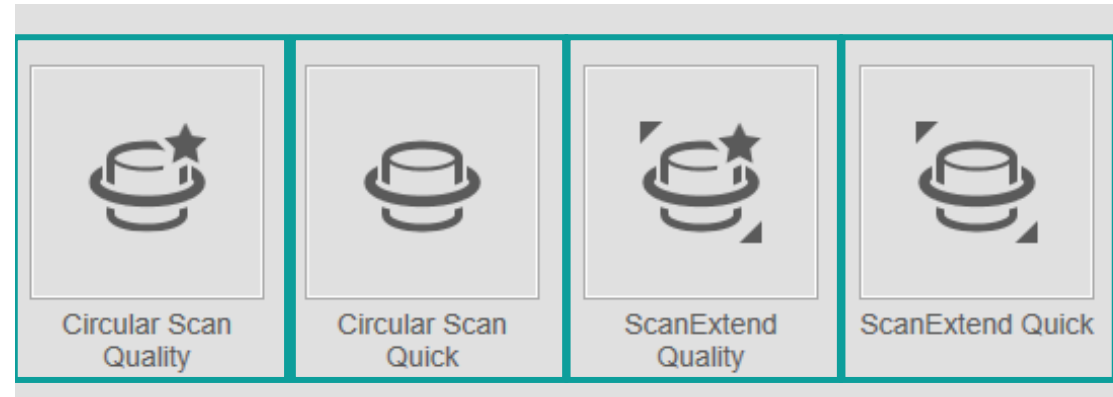# ScanExtend – Horizontal Field-of-View Extension

ScanExtend provides two benefits to increase versatility of your application

- Increase scan diameter with one rotation and without stitching artefacts
- Move your part closer to the tube to increase magnification and though enhance detail visibility

Extended scan diameter

Standard scan diameter

Mag. with ScanExtend

Mag. without ScanExtend
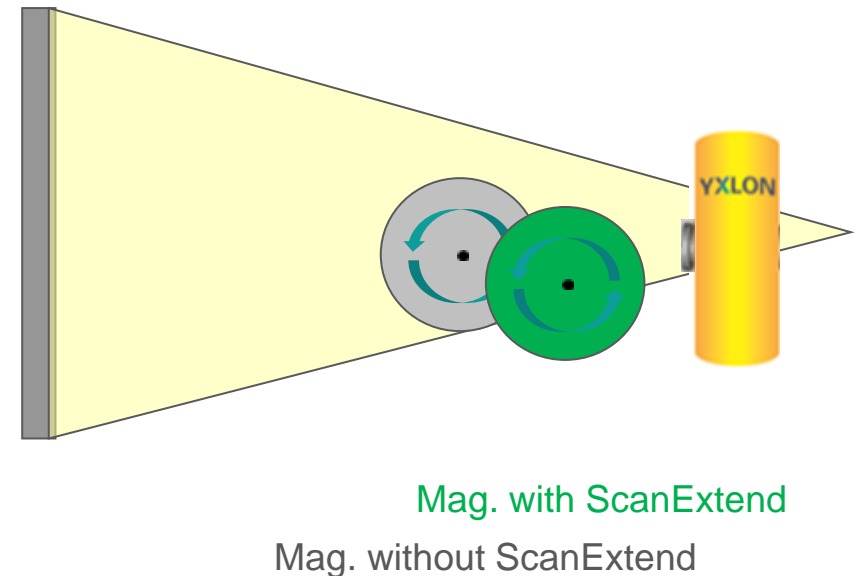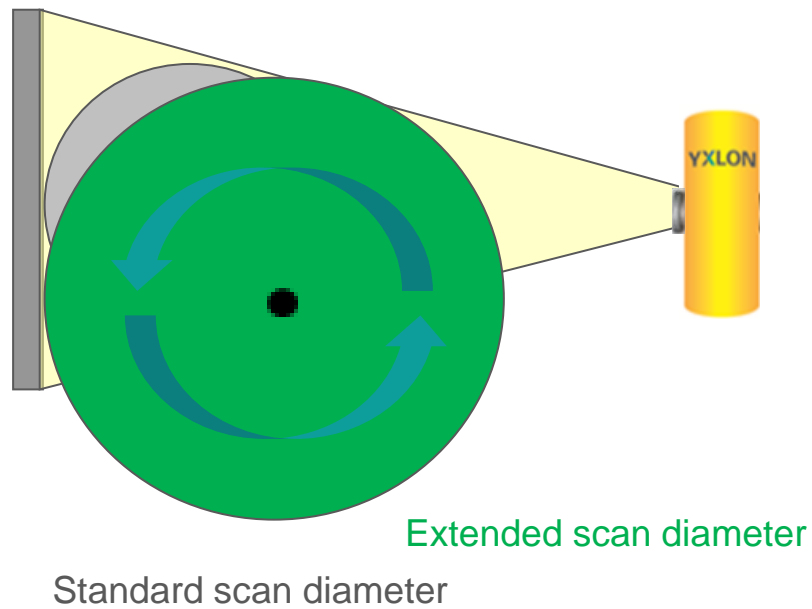
Top View on inspection part

YXLON
Technology with Passion

Circular Scan Quality | Circular Scan Quick | ScanExtend Quality | ScanExtend Quick

Summary of CT Trajectories

Circular Scan
- QuickScan (continuous rotation)
- Quality Scan (Start-Stop with possibility of averaging and skipping of frames)

ScanExtend
- half-cone beam scan, horizontal extension
- vertical extension
- combination of horizontal and vertical extension for maximum CT field of view

CERA
- separate reconstruction station
- scanning parts with later reconstruction
- reconstruction queue

CT INSPECTION
Industrial Analysis Station

Our industrial analysis station has several advantages

- Air-conditioned
- Dust-protected
- Equipped with main switch
- Ideal for rough environments

YXLON
Technology with Passion

Create Semi-Automatic Inspection Sequences on the Fly

- Generate reproducible results in no time

- No need to switch into special teaching mode

- Toolbox for annotations, highlighting areas for easier focusing

- Golden sample reference images are stored automatically at each position to support the decision

- Inspection reports and images for documenting the results can be stored automatically

- "Auto-play" function for series inspections after each door closing
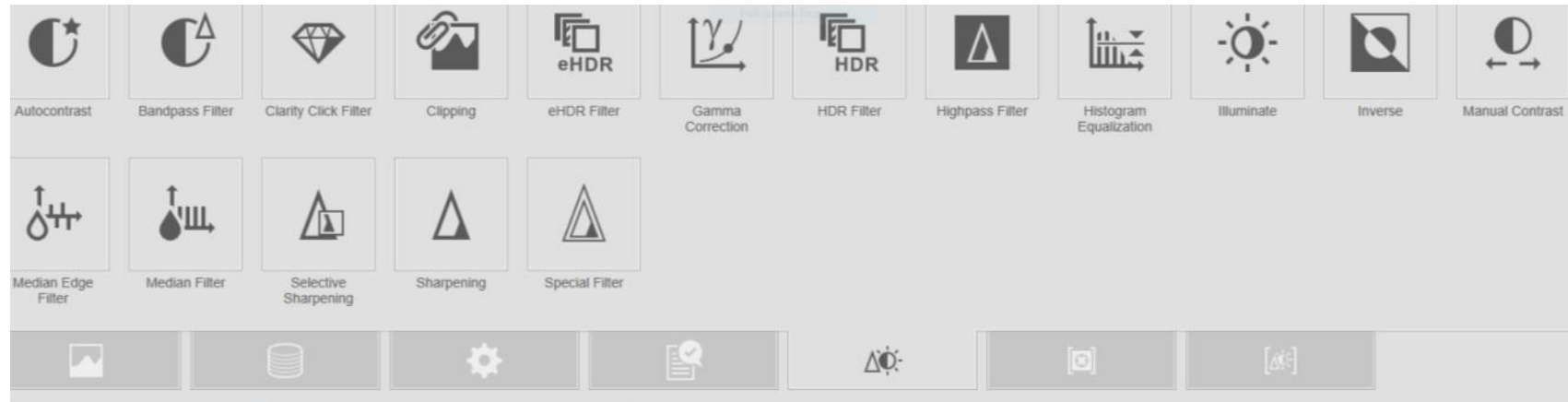
[Videos are available]
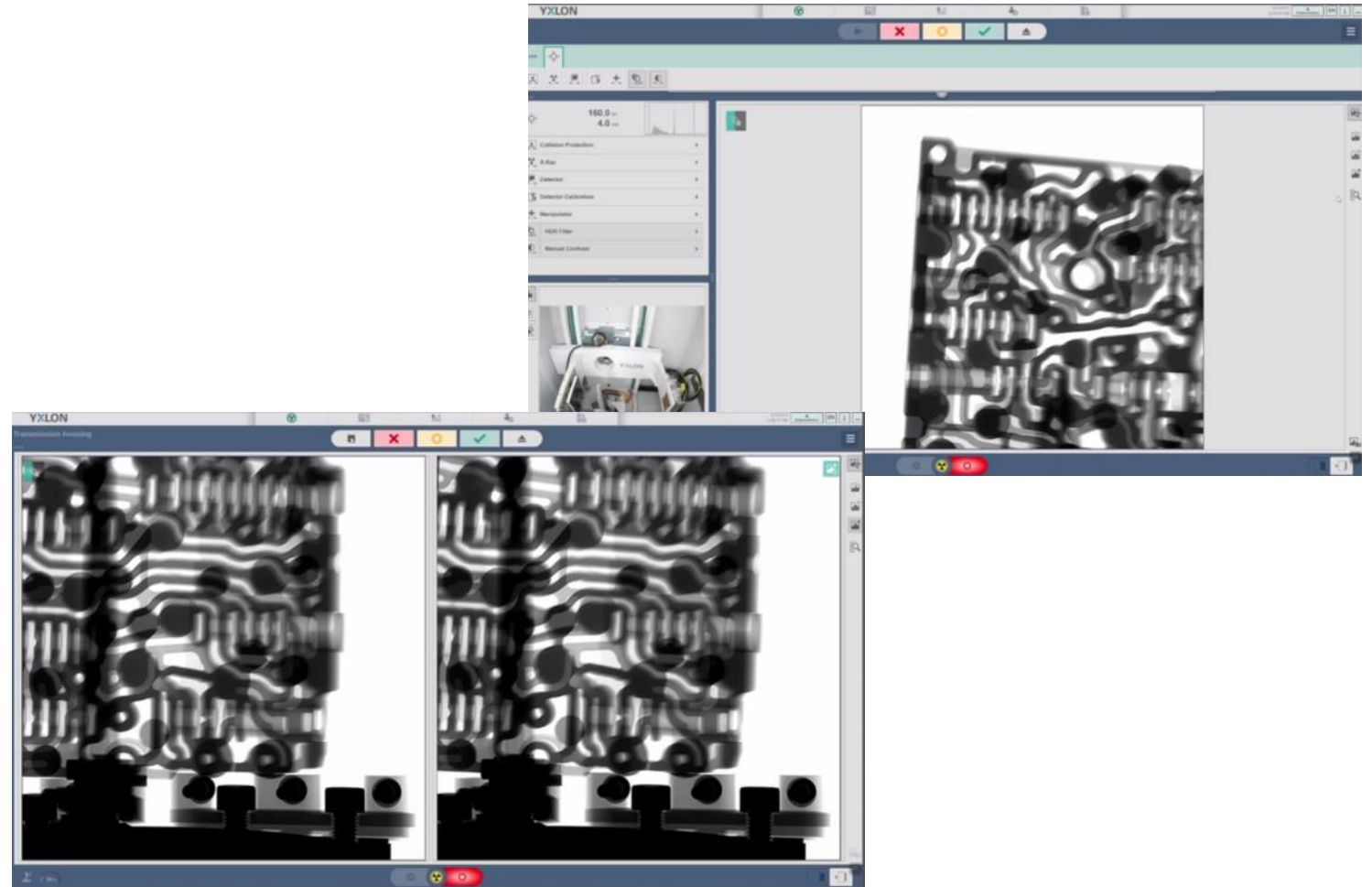
YXLON
Technology with Passion

Toolbox for Image Enhancement

Various live image x-ray enhancement filters are available e.g.
Yxlon HDR, ClarityClick, Special Filter

- Tools are fast and intuitively to use with few mouse clicks
- All filters clearly arranged in one toolbox
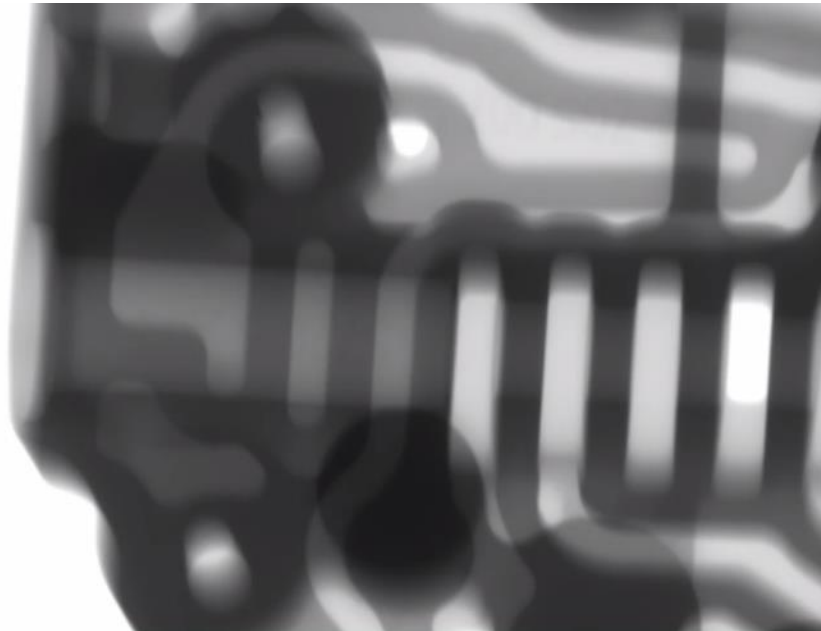- You have also the possibility to create your own filter sets
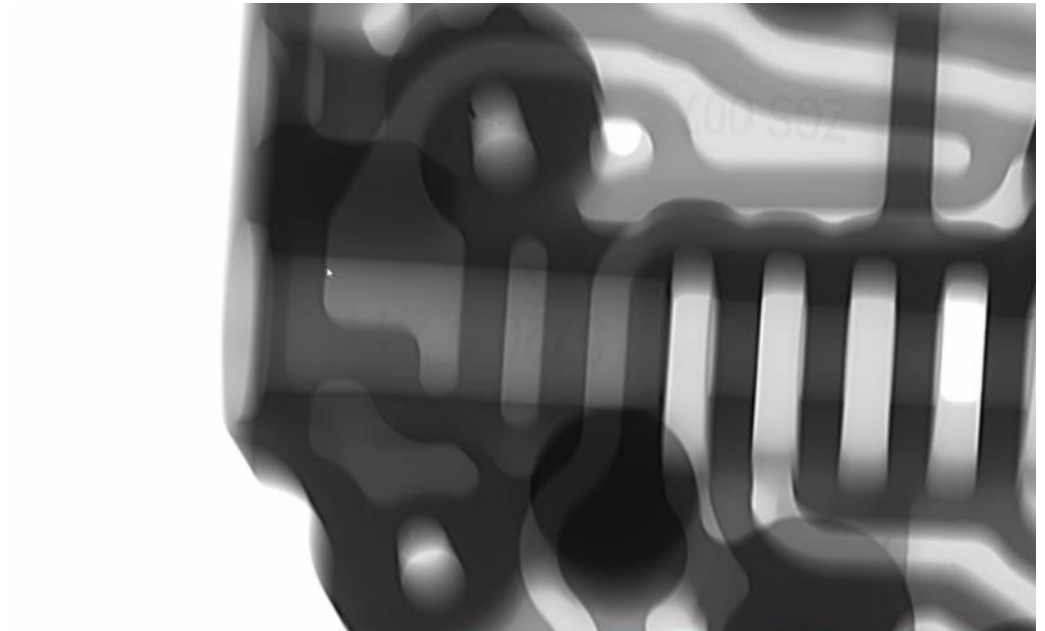
FAST IMAGE ENHANCEMENT

Yxlon HDR Filter

The outstanding HDR (Highly dynamic radioscopy) filter from Yxlon uncovers defects at a glance.

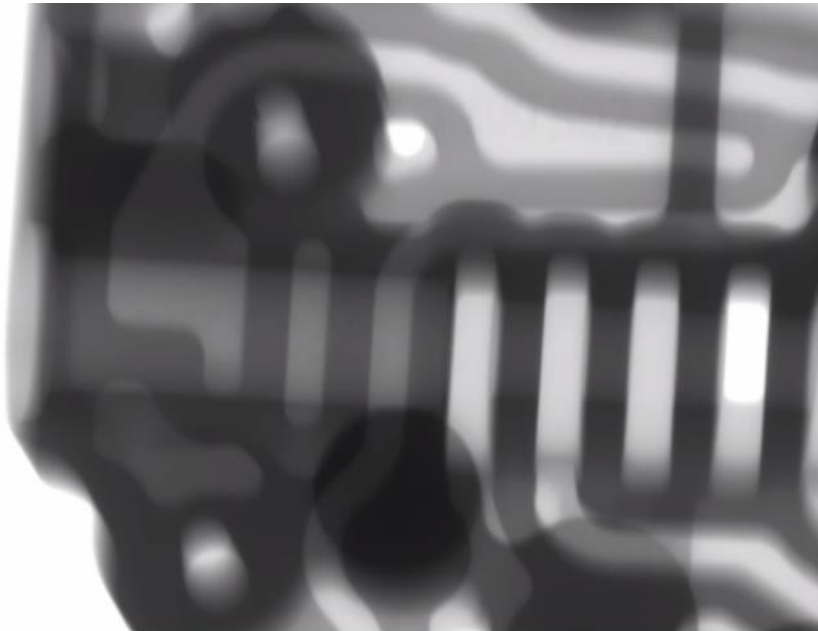Standard x-ray image

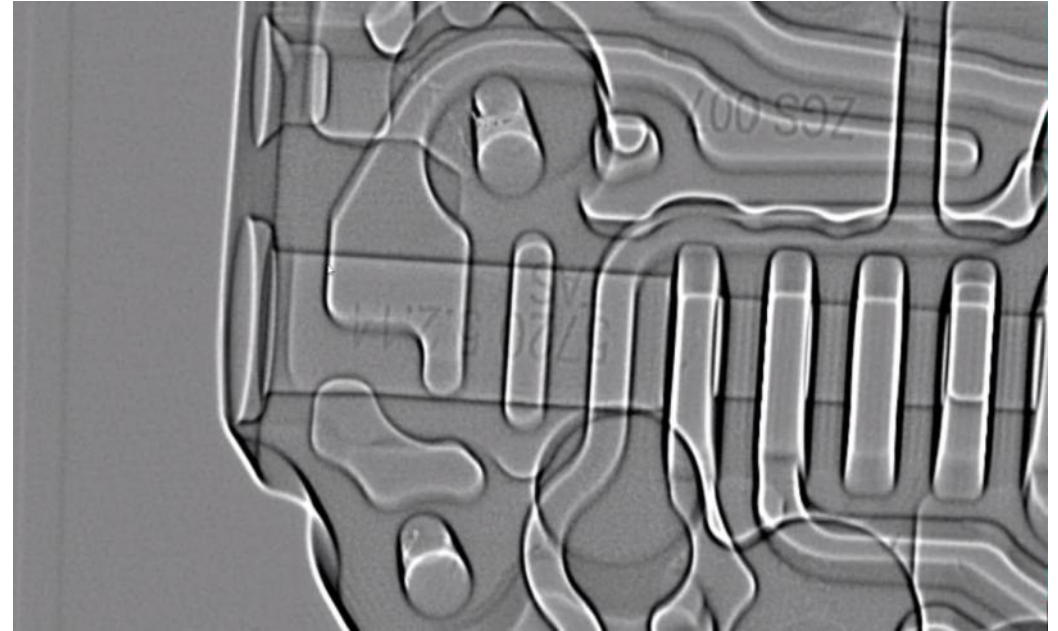HDR-filtered x-ray image

YXLON
Technology with Passion

Yxlon X-ray Image Enhancement Filters

The filter toolbox offers various filters for full flexibility to detect defects easily.

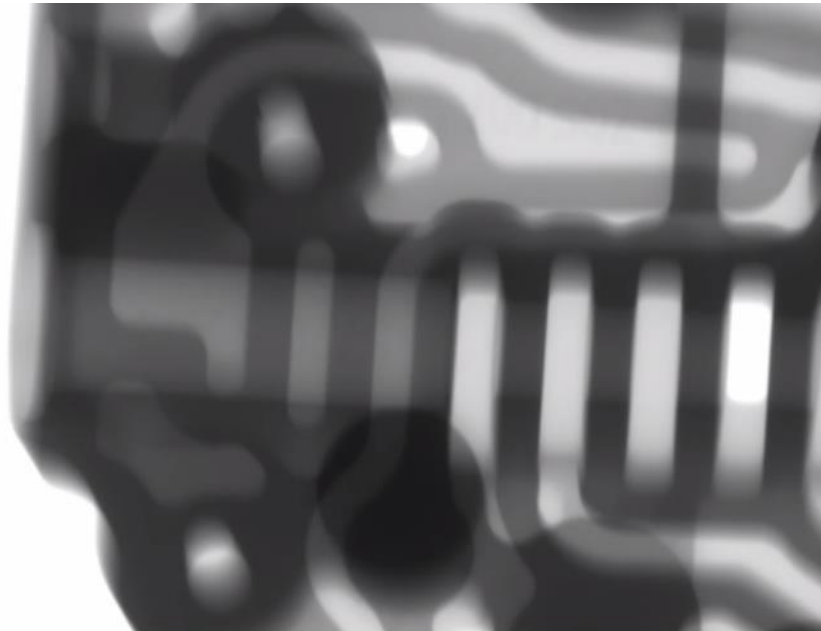Unfiltered image

Specially filtered image

Yxlon X-ray Image Enhancement Filters

The filter toolbox offers various filters for full flexibility to detect defects easily.

Unfiltered image

BTF filter set

YXLON
Technology with Passion

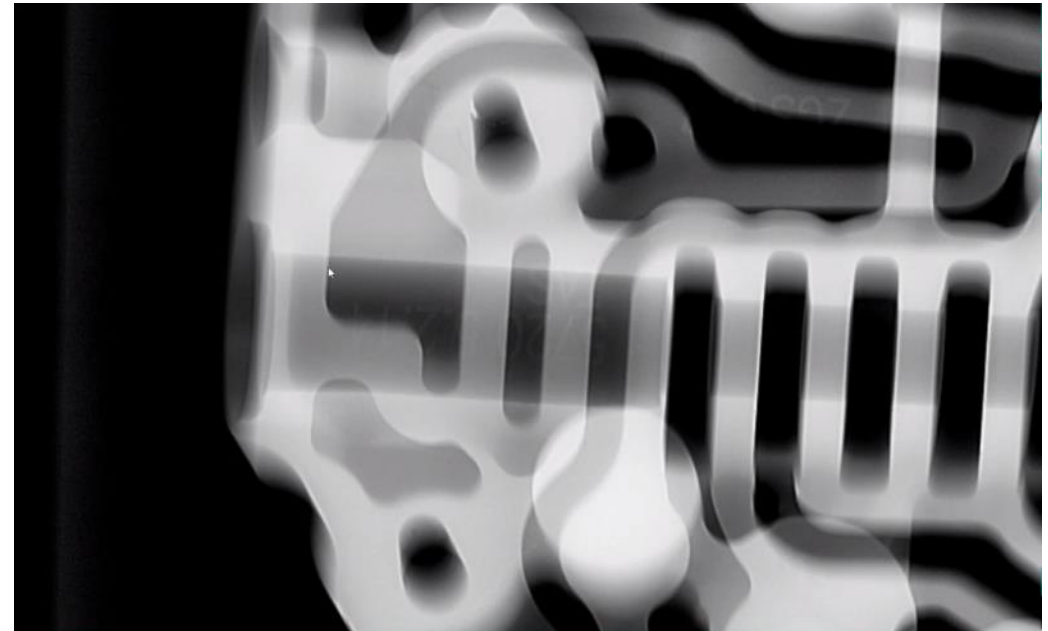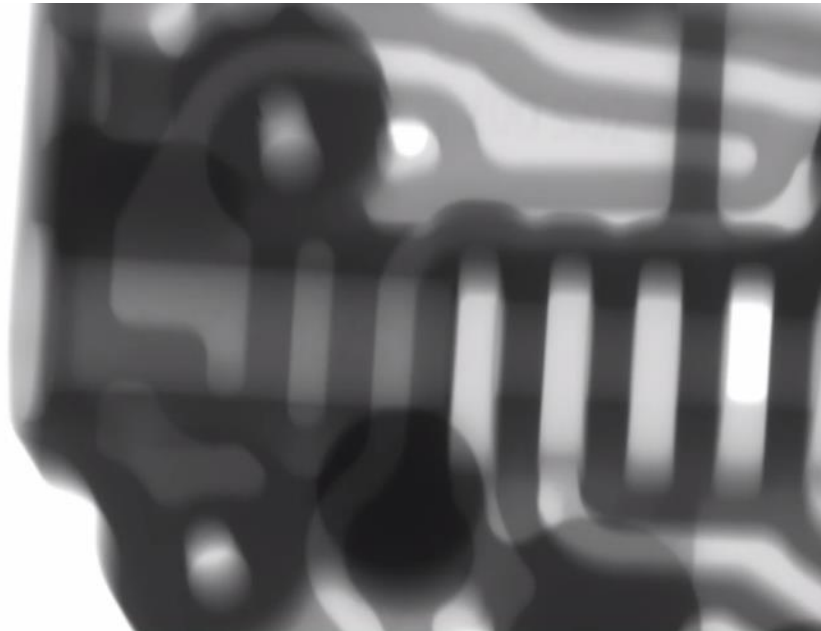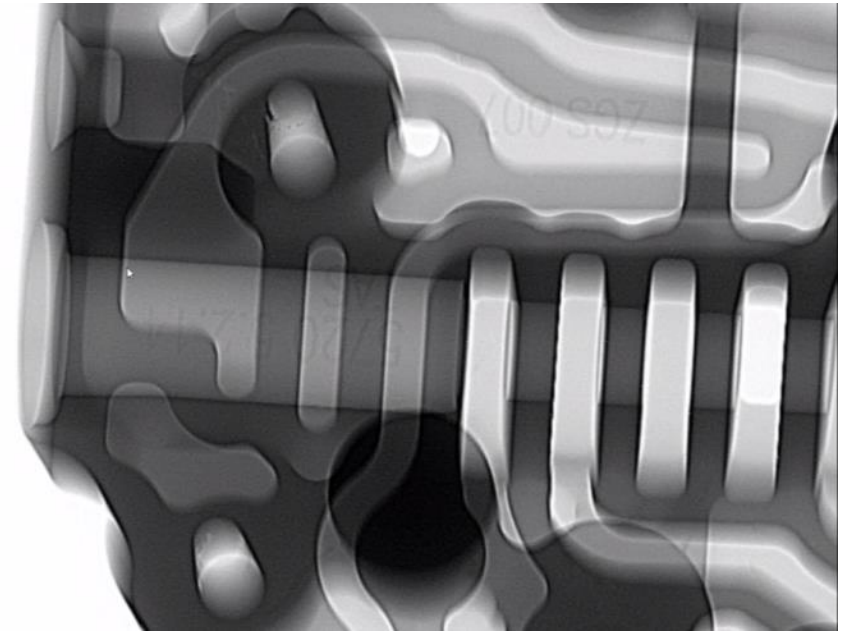# Yxlon X-ray Image Enhancement Filters

The filter toolbox offers various filters for full flexibility to detect defects easily.

Unfiltered image

ClarityClick filter set

YXLON
Technology with Passion
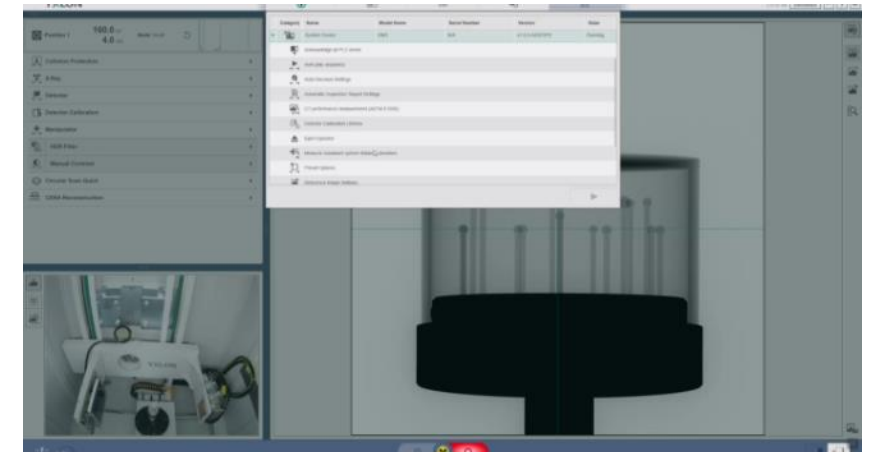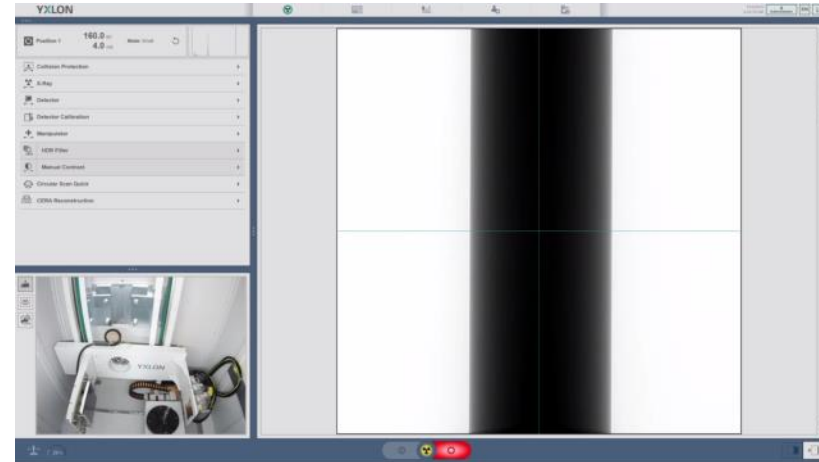
Automatic System Performance Checks

Perform automated system performance check for repeatable CT image quality

- ASTM E1695 performance check
  - Measurements of spatial and contrast resolution

- Determine the geometrical error of CT scan with SD measurement referring to VDI/VDE 2630 Part 1.3

- Results are documented in a pdf report

YXLON
Technology with Passion

Health Monitor

Get information about the system status at a glance

- Check status of components in one space
- Problem solutions are provided by the system e.g. detector calibration
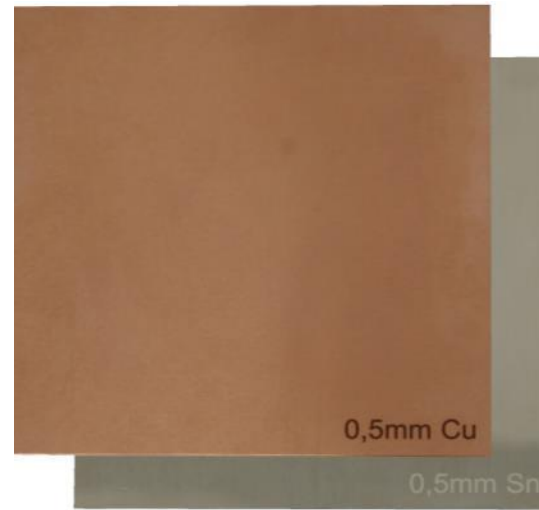

YXLON
Technology with Passion

Yxlon Accessories

We offer a variety of accessories to facilitate your inspection task

- Beam blocker for automatic tube warm-up
- Labelled beam filter set
- Universal carbon three jaw chuck
    - Fast fixing of parts and inspection without remounting
    - Excellent for CT as it can easily be separated from the metal cast part
    - Case with chuck, carbon jaws, tools and manual

from top to bottom: Beam filter, beam blocker, universal carbon three jaw chuck

YXLON
Technology with Passion

Yxlon Accessories

We offer a variety of accessories to facilitate your inspection task

- High precision chuck
- 300 mm and 600 mm turntable
  - t-slots for easy fixing of parts and part holders
- YXLON Ruby gauge
- NAS for data storage
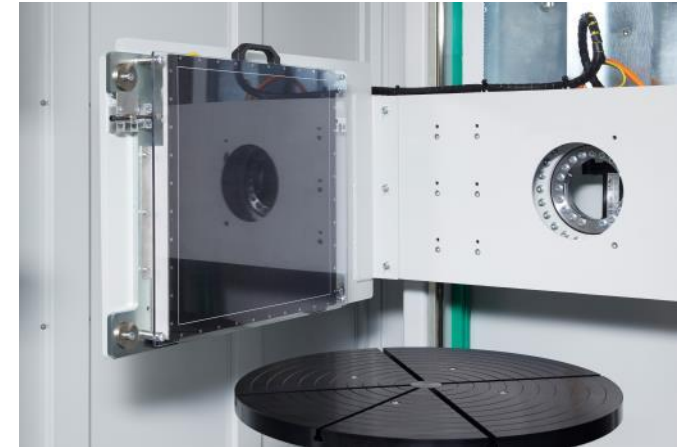
from top to bottom: High-precision chuck, turntable with t-slots, YXLON ruby gauge for SD measurement referring to VDI2630

ASTM Reference Images

According to norm resolutions, plate thickness and
possible defect types are listed

- ASTM E2422 DVD Aluminum (E155)
- ASTM E2660 DVD Invest. Steel (E192)
- ASTM E2669 DVD Titanium (E1320-0)
- ASTM E2869 DVD Magnesium (E155)
- ASTM E2973 DVD Aluminum and Die Castings (E505)
- ASTM E2868 DVD Steel (E0446)

Live filters will be applied to the reference images as well
as zoom. Manual contrast can also be applied to the
reference image.
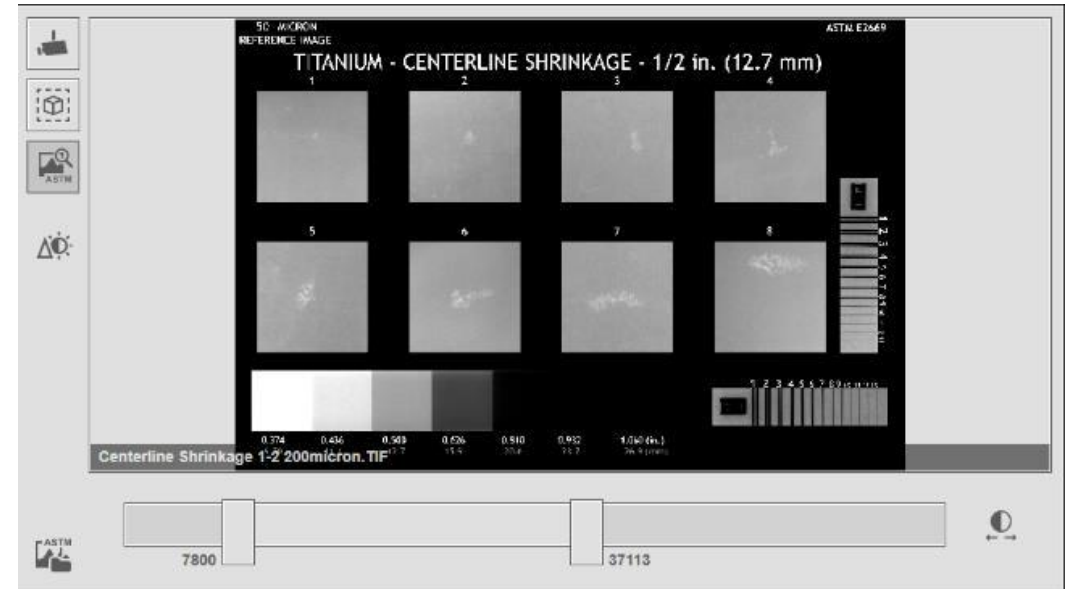
YXLON
Technology with Passion

Modern Industrial System Design

- Compact footprint and space-saving design
- All components are integrated in the system
- System can be placed into a corner, maintenance access for customer and Yxlon Service via two sides
- Cooler can be pulled out for easy maintenance

Product-Life-Cycle Services UX20

Category

Products		Contracts		Academy		Field Service	Spares and Repairs	Support	Inspection Service

Modules

	WarrantyPass UX20	ServicePass UX20	User Training Basic UX20	Technical Training MGi Level 1	DailyRate Standard Systems	SpareParts UX20	1st-line support UX20	SmartScan UX20 [1]
					TravelRate Air and Ground		Remote Support UX20	Application Consulting UX20 [1]
			User Training Application UX20		On-site Installation UX20 Standard	SmartExchange MGi		

Solutions

	ATLINE Inspection	Own Application

YXLON
Technology with Passion

Conclusion

YXLON's UX20 is a dependable universal X-ray and CT inspection system for medium and large cast parts

UX20 is

- focused on ease of use with Yxlon's award winning user interface Geminy

- a modern industrial design with compact footprint and large inspection envelope for DR and CT

- a future-safe investment with Geminy as Yxlon's platform software and tailored service products

YXLON
Technology with Passion
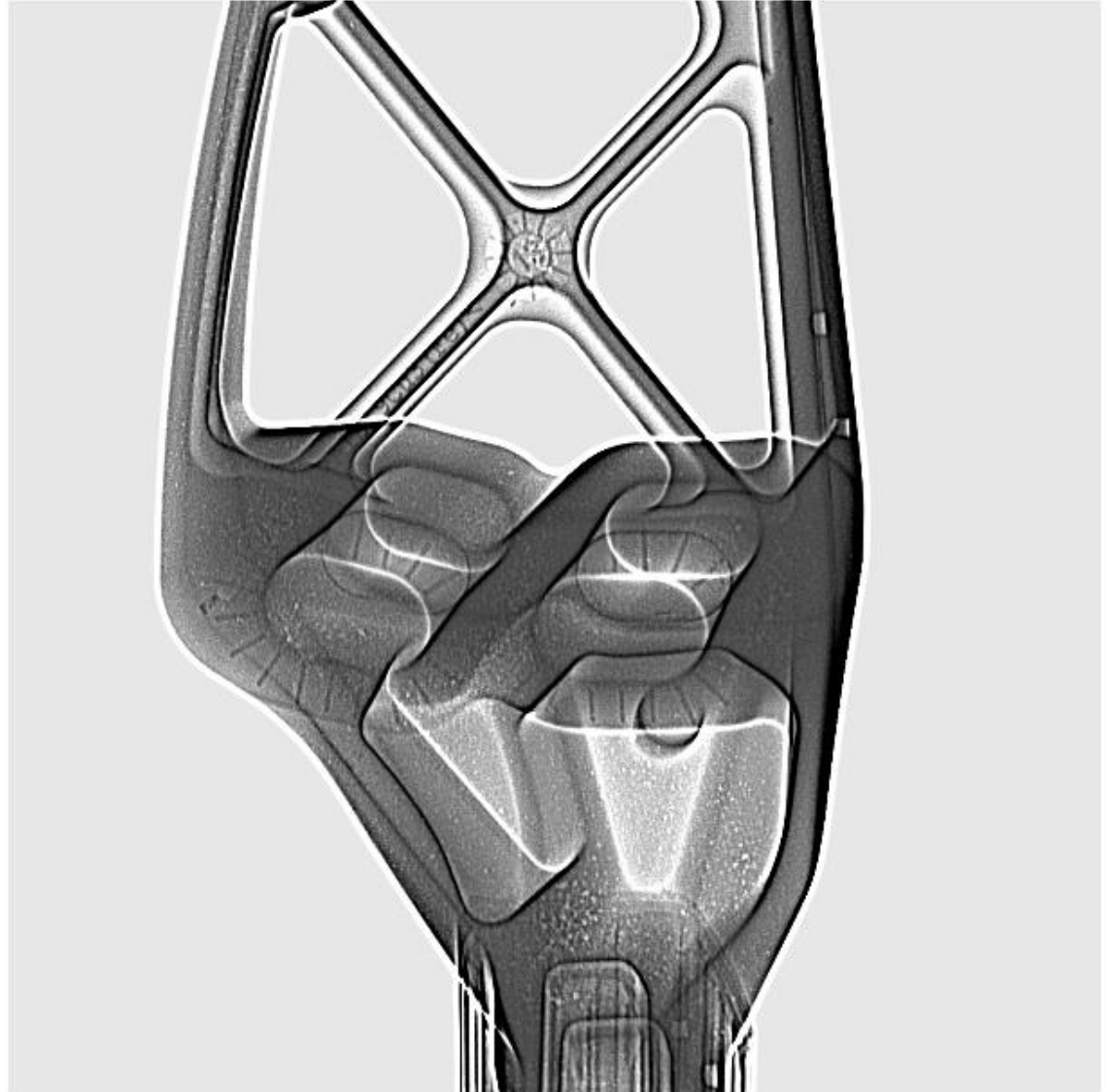
Thank you for your interest

YXLON
Technology with Passion

Back-up

YXLON
Technology with Passion

Application Images

YXLON
Technology with Passion

Side Mirror DR

- Special filter applied

YXLON
Technology with Passion

Side Mirror DR

- Yxlon HDR filter applied

YXLON
Technology with Passion

Side Mirror CT

- Porostiy analysis
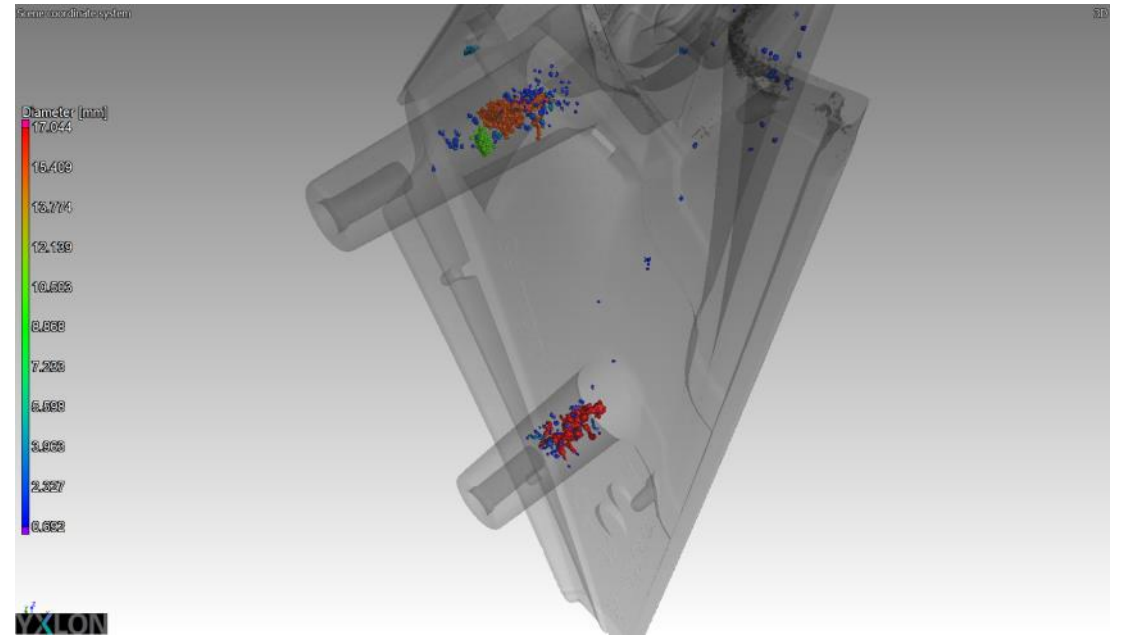
Side Mirror CT

- Analysis in VolumeGraphics

YXLON
Technology with Passion

Automotive Cast Part

- Wall thickness analysis