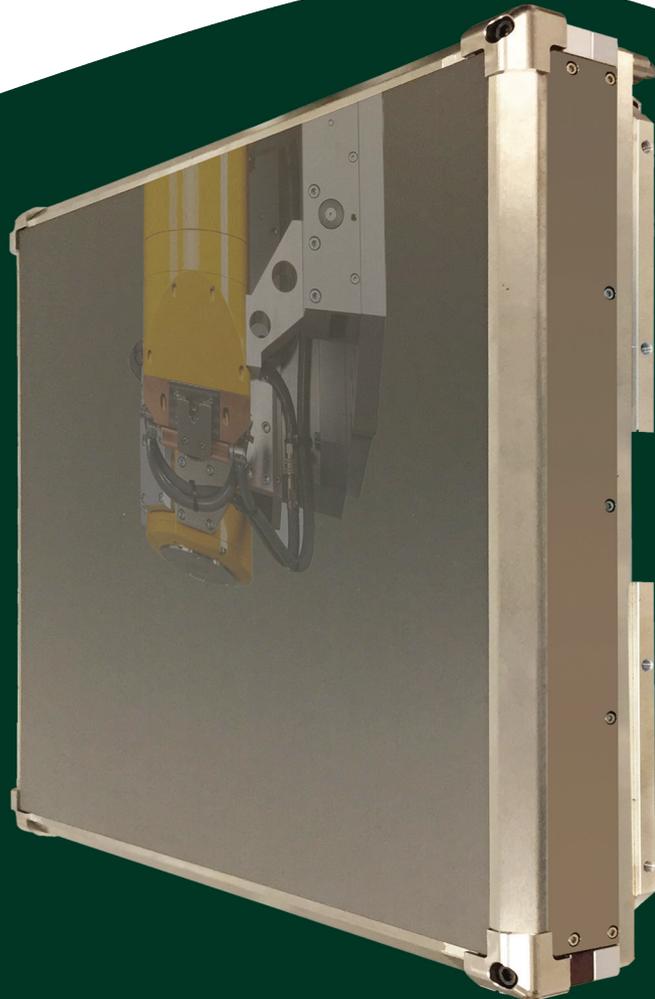


Dynamic 41 digital detectors

Exclusive superior image quality X-ray detectors
for 2D radiographic inspection and 3D CT.



**Improved cycle time
without image quality impact**

Dynamic 41 detectors – Powering the next generation of X-ray inspection and CT

The Dynamic 41|100 and Dynamic 41| 200p+ detectors are the first in Waygate Technologies next generation industrial X-ray flat panel detector platform. The Dynamic 41|100 detector combines superior image quality with improved detection speed at 410 x 410 mm² detection area and 100 µm pixel size. It achieves 100 micron results at 200 micron efficiency and contrast-to-noise-ratio, while the new Dynamic 41|200p+ detector increases industrial inspection speed by factor 2-3, allowing high throughput fully automated CT on the production floor.

In its new p+ configuration, the Dynamic 41|200 comes standard with a new photodiode protection coating, ensuring better radiation protection at same sensitivity – hence, significantly increasing the detector lifetime at high energy inspection applications.

Based on exclusive X-ray detector technology, Waygate Technologies offers its first 100 µm, 16MPixel detector designed exclusively for rough and high-energy industrial X-ray applications to its radiography and CT customers. The Endurance™ CsI scintillator offers superior resolution and brightness compared to conventional GadOx or other powder based scintillators.

Key Applications – Increasing industrial inspection quality and productivity

The Dynamic 41 detectors demonstrate their excellent performance especially at industrial CT for failure analysis and 3D metrology as well as at 2D radiographic inspection of parts such as:

- Aerospace and automotive castings
- Additive manufactured and composite parts

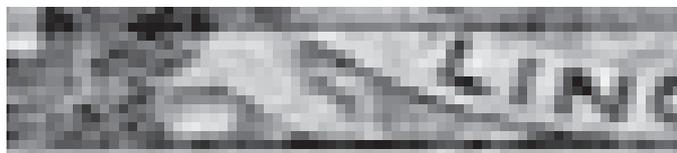
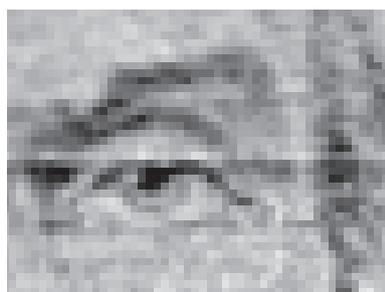


100 μm imaging: See more to know more

The 5 US dollar bill comparison clearly visualizes the quality gain:

At identical kV parameters, the new Dynamic 4i|100 detector provides doubled resolution at comparable signal-to-noise-ratio and dynamic range.

Conventional DXR250 200 μm pixel detector



State of the art DXR flat panel detector with
200 μm pixel size

Dynamic 4i|100 detector

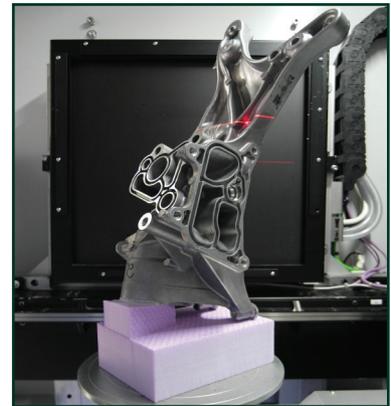


Superior Dynamic 4i|100 detector providing 100 μm
pixel size for superior image quality and doubled
resolution to detect two times smaller defects

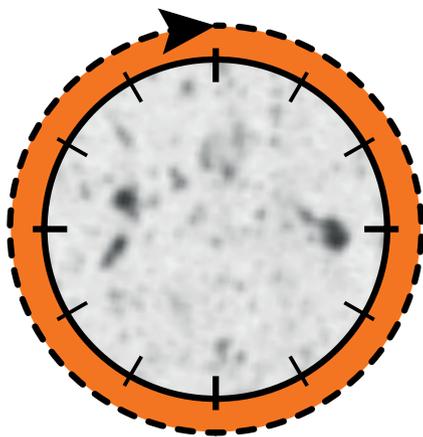
Doubled productivity at same quality level

Due to its equivalent or even higher sensitivity compared to state of the art 200 μm pixelsize detectors, the new Dynamic 41|100 detector allows a 2x resolution increase without cycle time impact or comparable result quality at significant reduced acquisition time (Dynamic 41|100 & Dynamic 41|200p+).

The comparison below shows pores in a scanned aluminum casting.

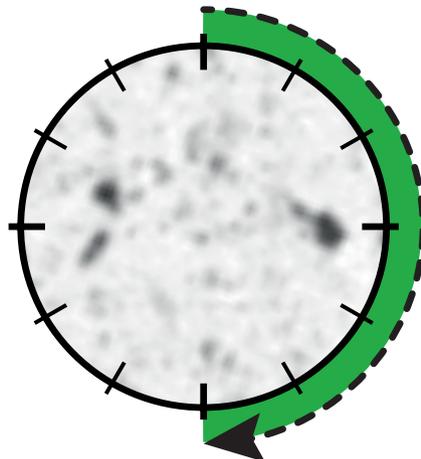


**State of the art detector
DXR250 (200 μm pixel)**

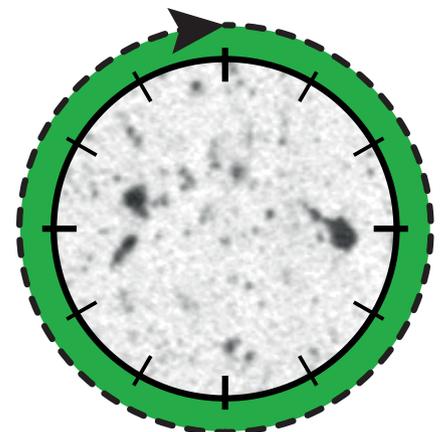


Baseline scan time

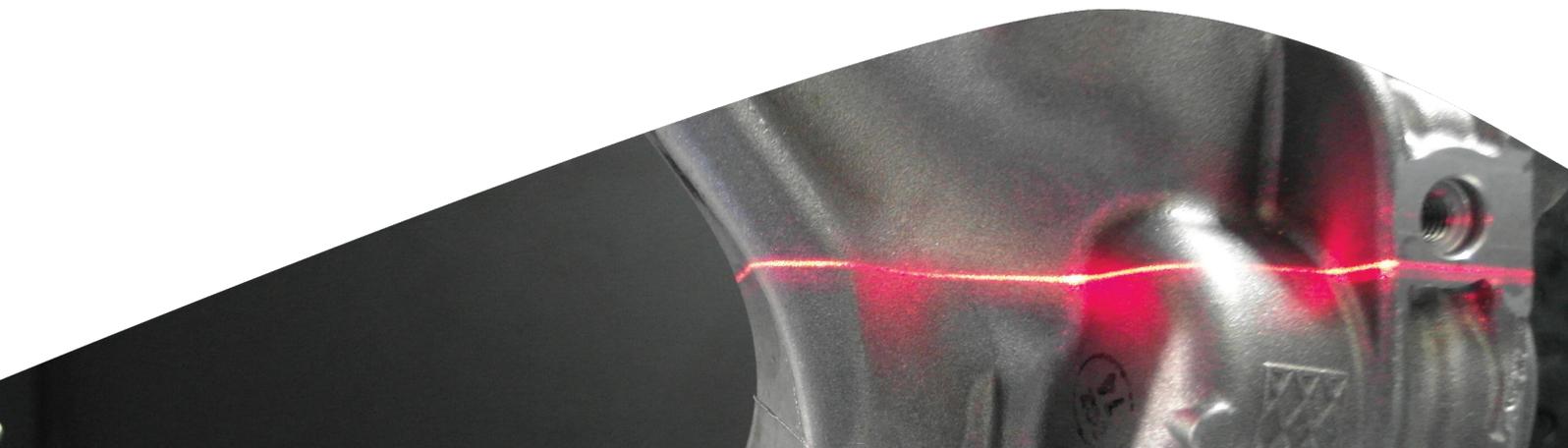
Advanced Dynamic 41 series



Same quality level at half baseline scan time with Dynamic 41|100 and Dynamic 41|200p+

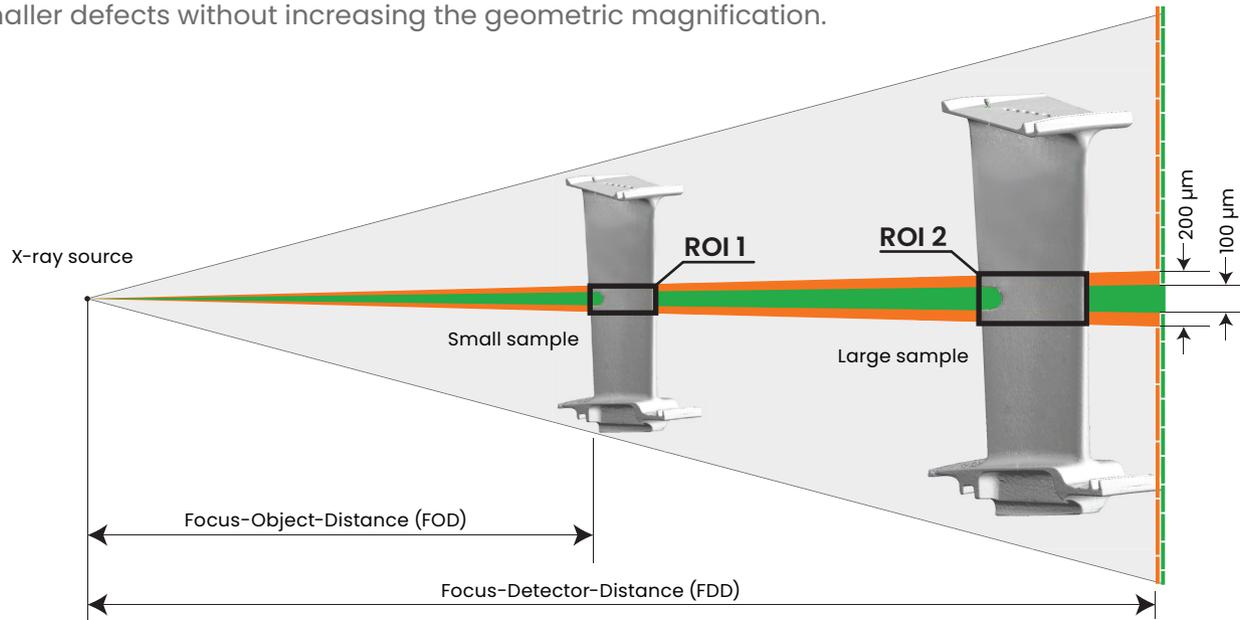


Same scan time as baseline but doubled resolution with 41|100



Doubled resolution at same geometric magnification

Without the need to change the system geometry parameters, the new Dynamic 41|100 detector allows imaging of larger objects at the same resolution due to less required geometric magnification. Alternatively, users are able to detect 2x smaller defects without increasing the geometric magnification.

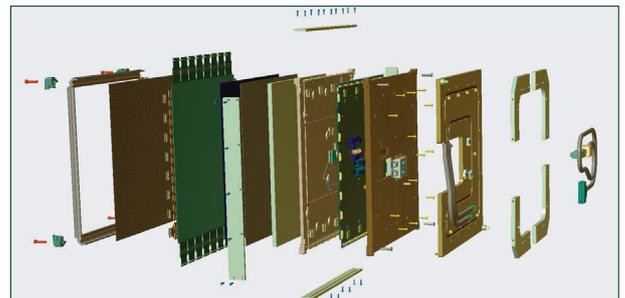


Scan resolution of ROI 1 is equivalent to ROI 2, but ROI 2 is 8 times larger due to smaller pixel allowing scanning larger parts with smaller magnification.

Exclusiveness

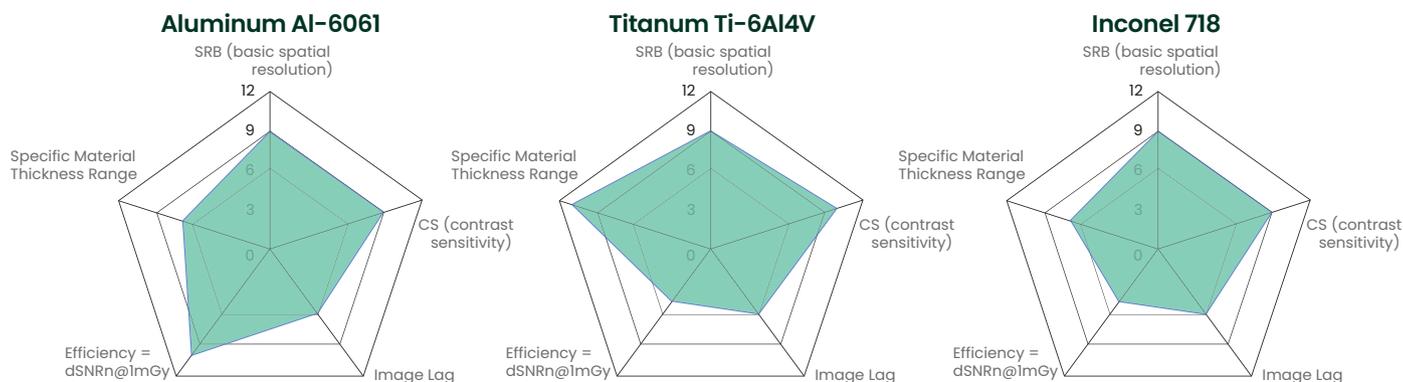
The new Dynamic 41 detector series is exclusively available for following systems:

- Phoenix V|tomex M
- Phoenix V|tomex C
- Phoenix V|tomex L
- Phoenix X|cube

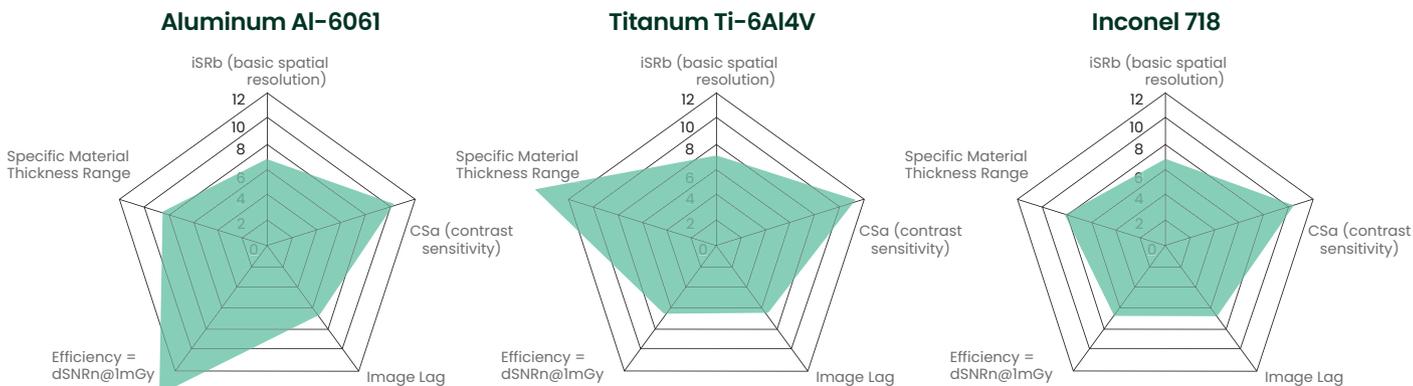


Detector characterization parameter

The Dynamic 4I|100 detector characterization according to ASTM E2597-14 for AL, TI and Inconel is displayed below (valid for specific detector gain settings):



The Dynamic 4I|200p+ detector characterization according to ASTM E2597-14 for AL, TI and Inconel is displayed below (valid for specific detector gain settings):



General specifications

	Dynamic 41 100	Dynamic 41 200p+
Pixel Size	100 µm; 200 µm with 2 x 2 binning	200 µm, 400 µm with 2 x 2 binning
Active Area (approx.)	405 x 405 mm (16" x 16")	
Pixel Matrix	4096 x 4096 (16 MP), usable: 4048 x 4048	2048 x 2048 (4 MP), usable: 2024 x 2024
Max. Frame Rate	Full FOV: 3 fps; 20 x 20 cm ROI: 5 fps 10 x 10 cm ROI: 10 fps	Full FOV: 20 fps; 20 x 20 cm ROI: 30 fps
Dynamic Range	10 000:1	
Lifetime Extension	Design optimized for industrial high energy CT applications	
Low Ghosting	To take images in quick succession	
High Sensitivity	Shorter exposures with same brightness	
ASTM E2597/DICONDE	Compliant	

Phoenix Dynamic 41|100 & 41|200p+ – Your Advantages

- Large area detector with superior image and result quality
- The Dynamic 41 detector family is exclusively available for Waygate Technologies system customers
- Reduce inspection times due to increased detector sensitivity, faster frame rates, larger imaging area and adaptive imaging modes
- 100 µm resolution captured with the efficiency and CNR of a state of the art 200 µm detector
- Premium CT results in less time

Dynamic 41|100 and 41|200p+

Key features & benefits

- 16" X-ray detectors with 100 μm / 200 μm pixelsize (16 or 4 MPixels) designed and optimized for longterm reliability at industrial high-energy use
- High-resolution images for easy detection of subtle indications (up to 50 μm /100 μm feature detection with minifocus X-ray tubes)
- Next generation photodiode design for up to 10x improved efficiency and sensitivity compared to state of the art 200 μm pixel DXR detectors allows 2x resolution increase without cycle time impact (41|100) or 2-3x cycle time increase without image quality impact (41|200p+)
- Detection of 2x smaller defects without increase of geometric magnification allows imaging of large objects at higher resolution (41|100)

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Baker Hughes 