



INDUSTRIAL IP67NC TDI ULTRA-FAST SCANNING

X-RAY IMAGING SENSOR (UFS)

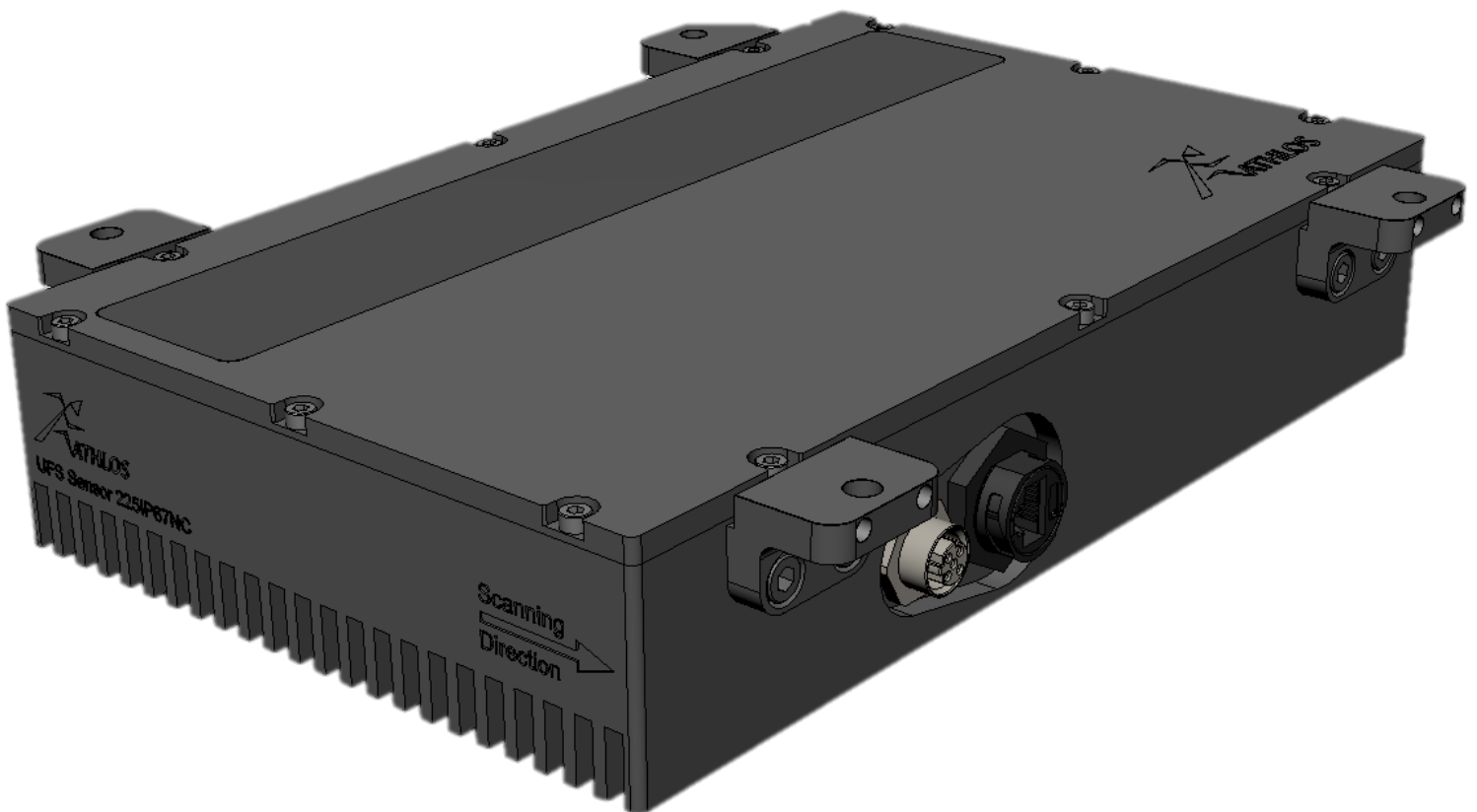
Direct Conversion x-ray imaging sensor for
fast scanning applications

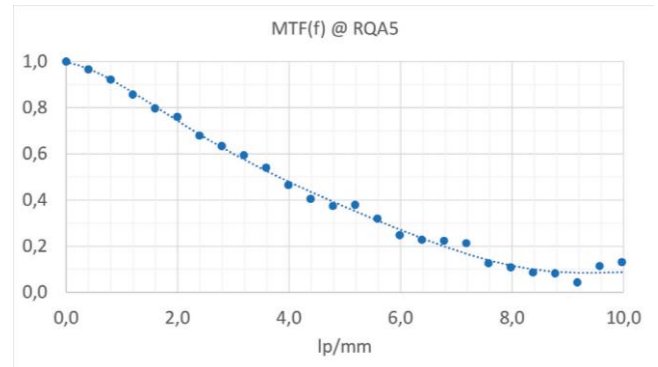
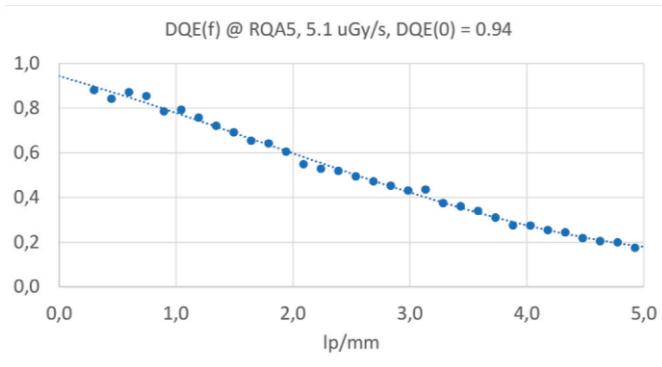
UFS-150IP67NC-44-TDI-HVS

UFS-225IP67NC-44-TDI-HVS

UFS-460IP67NC-44-TDI-HVS

No active Cooling





Specification	Value	Unit	Comment
Pixel size	100 x 100	µm	
Active area width	2.8 28	mm pixel	28 stages TDI
Active area length:			
UFS-150IP67NC-44-TDI-HVS	153.6	mm	
UFS-225IP67NC-44-TDI-HVS	230.4		
UFS-460IP67NC-44-TDI-HVS	460.8		
Pixel binning options (TDI)	1x1, 2x2, 4x4	pixel	
Pixel mode of operation	Gen 3 Energy Integration -TDI		TDI Sensitive to Single Photons
Detector material	CdTe		
Energy range	10-360	kV	
Sensor mode of operation	TDI mode		
Dynamic range	16	bit	
TDI scanning object speed (MAXIMUM)	28 180 1700	m/min m/min m/min	100 µm resolution 200 µm resolution 400 µm resolution
TDI scanning object speed	User adjustable		
Communication interface	Gigabit Ethernet		
Line rate	1 up to 75000	lps	
Cable length	up to 10	m	Shielded. Consult with Athlos technical support, for longer cables
Sensor power supply	9-24	V	
Sensor power consumption	1.3	Watt/cm	Peak consumption per cm of active length
Operating ambient temperature range	10 - 40	°C	No peltiers, No active cooling
Storage temperature range	0 - 50	°C	
Physical dimensions	255,160,50 (X, Y, Z)	mm	Without the mounting brackets
Weight	3.5	kg	UFS225IP67NC

Applications



Food industry

- Safety and Quality control
- Foreign object detection
- Object counting
- Seal integrity inspection

Automotive industry

- Tire quality inspection
- Metal casting inspection
- Metal parts inspection for porosities and inclusions



Oil & Gas industry and nuclear power stations

- Weld inspection
- Pipe inspection for cracks, porosities and inclusions
- Industrial CT

Electronic components industry

- Reel component inspection
- Reel component counting (even 01005 component sizes)
- PCB and surface mounted assembly inspections



Pharmaceutical industry

- Non-Destructive Testing (NDT) to Ensures product safety and quality.
- Foreign object detection
- Seal integrity and fill level inspection

Key Performance Indicators

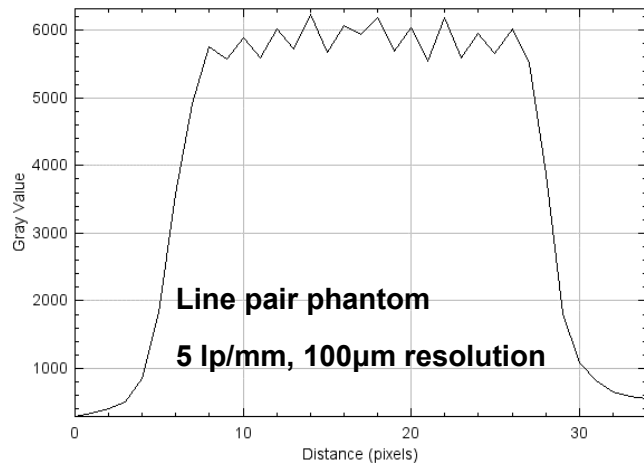
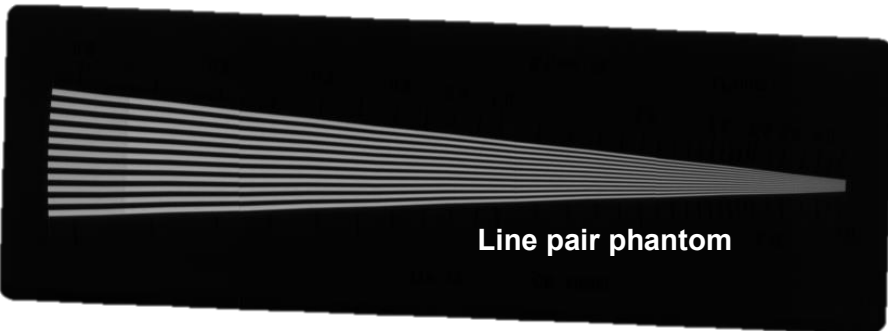
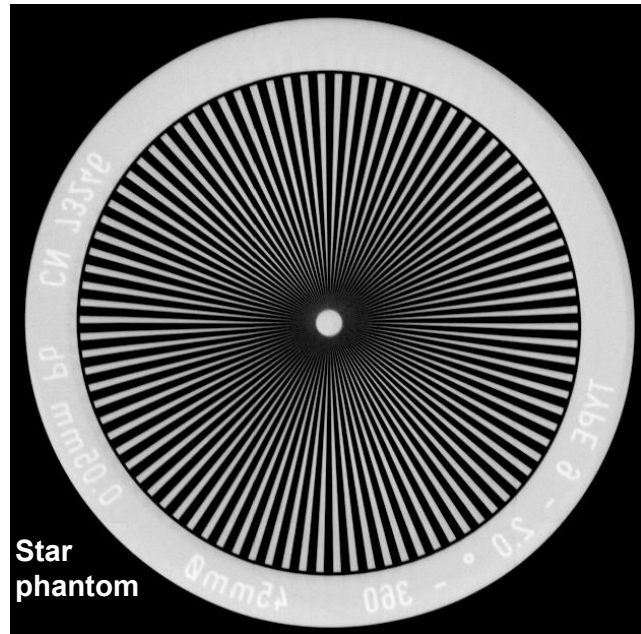
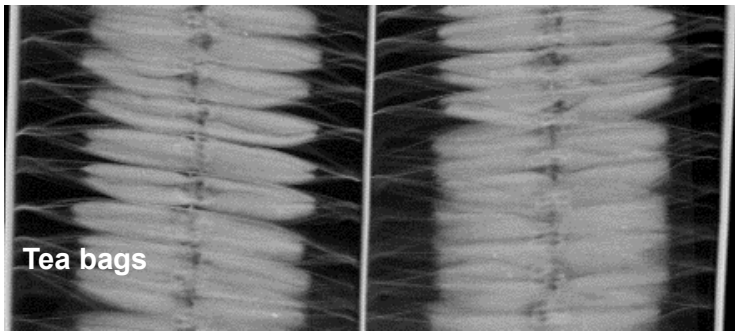
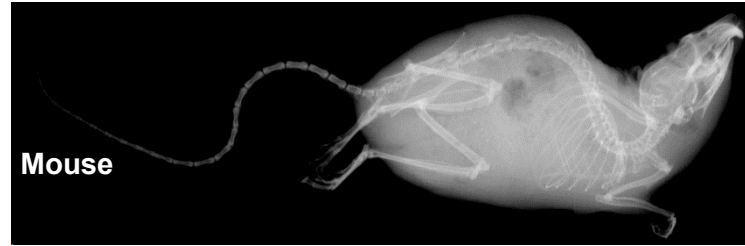
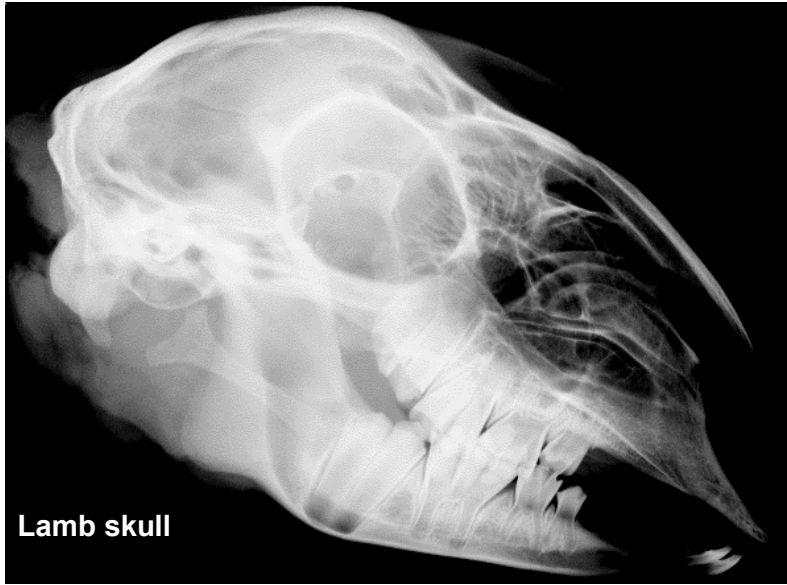
Benefit

Only 7mm distance from the detector to the top of the X-ray window	Accurate imaging
Mounting brackets flush with the X-ray window	Easy mounting Allows the detector surface to be very close to the inspected object
Mounting brackets are customizable on demand	UFS Sensor can be readily mounted without changes on the customer system
Application specific collimator material	<ul style="list-style-type: none"> • Bronze for food inspection applications (Energy range 10kV-90kV) • Tungsten (W) for weld inspection applications (Energy range 90kV – 360kV)
User selectable speed and resolution	<ul style="list-style-type: none"> • Up to 28 m/min for 100 µm resolution • Up to 180 m/min for 200 µm resolution • Up to 1700 m/min for 400 µm resolution
IP67 enclosure	Full protection against dust particles and water
Ruggedized Direct Conversion detector	Longevity for operation even at harsh environments
TDI Sensitive to single photons	<ul style="list-style-type: none"> • High Contrast • High Sensitivity • High Dynamic range • Single energy imaging with all regular x-ray sources

Easiness of implementation and use

- **Plug and Play**
- **Does not require recalibration**
- **Does not require separate calibration for each material**
- **Dynamic auto-adjusted calibration within the operating temperature range**
- **24/7 operation**

Sample images can be viewed in the next pages.

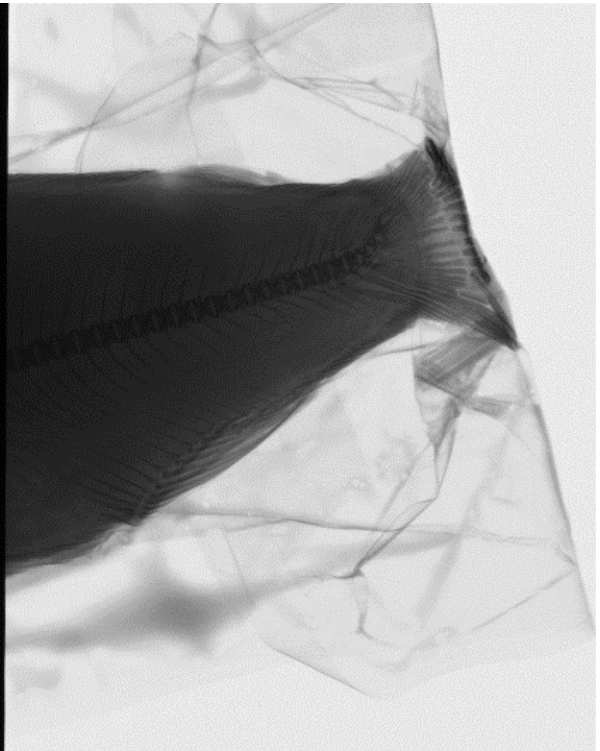


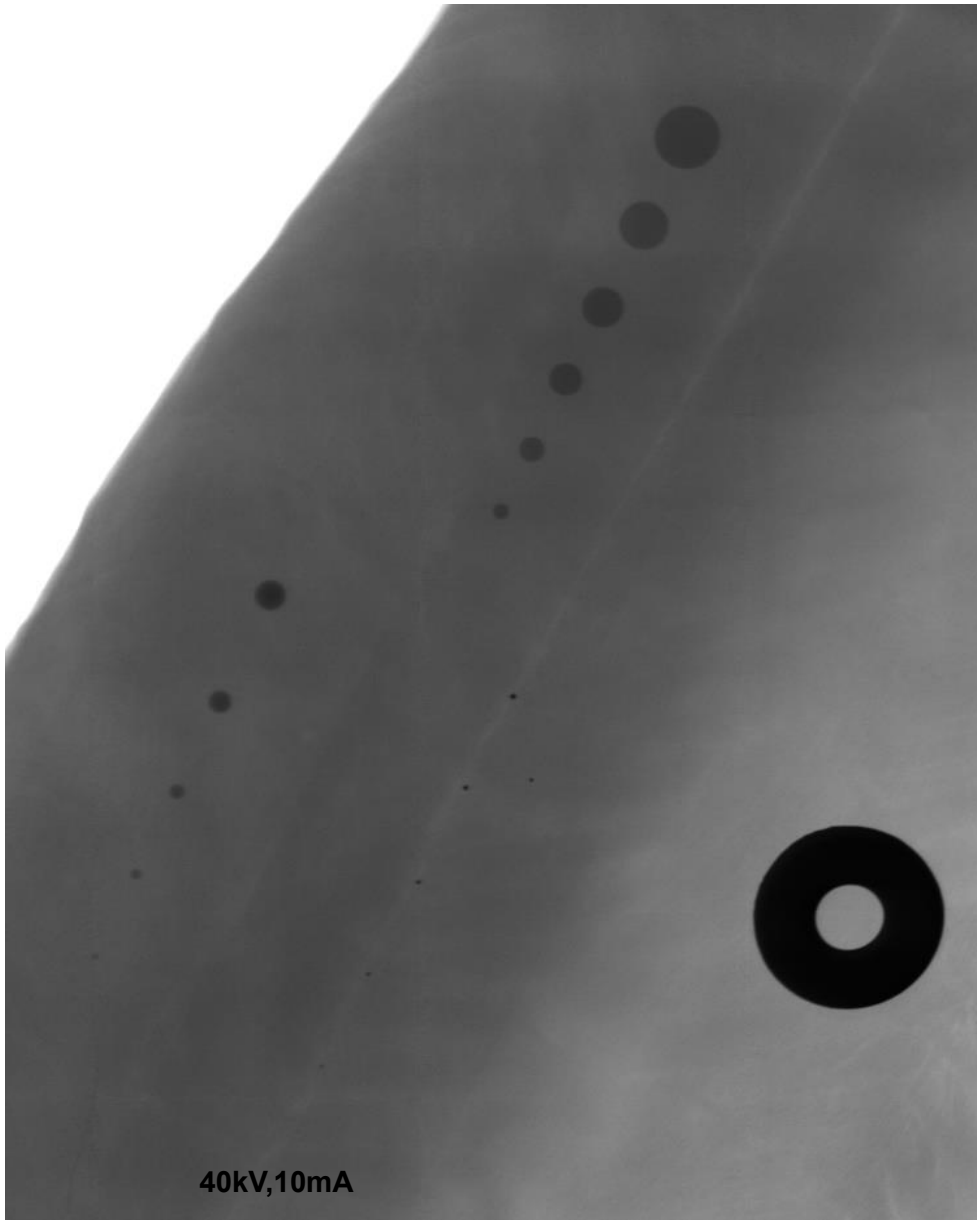
Fish



These two images seen together, demonstrate the very large dynamic range.

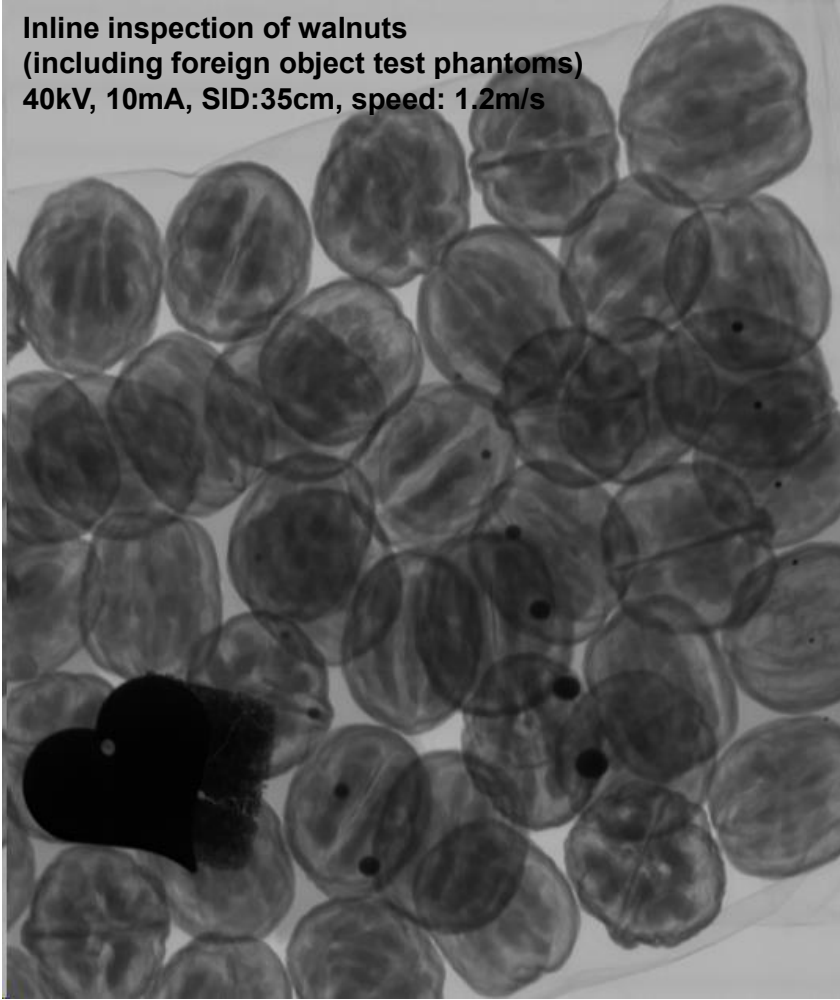
Same fish: vacuum sealer bag is visible.





JIMA (Japanese Inspection Instruments Manufacturer's Association) test phantoms (5 steel (F2SB5-01), 5 quartz glass (FRQB5-02), 6 aluminum (FALP6-1.0)). The foreign test objects were placed on top of a 30mm thick salmon fillet.

**Inline inspection of walnuts
(including foreign object test phantoms)**
40kV, 10mA, SID:35cm, speed: 1.2m/s



**Inline inspection of bread loaf
(including foreign object test phantoms)**
40kV, 10mA, SID:35cm, speed: 1.2m/s

