

INDUSTRIAL IP67NC TDI ULTRA-FAST SCANNING X-RAY IMAGING SENSOR (UFS)

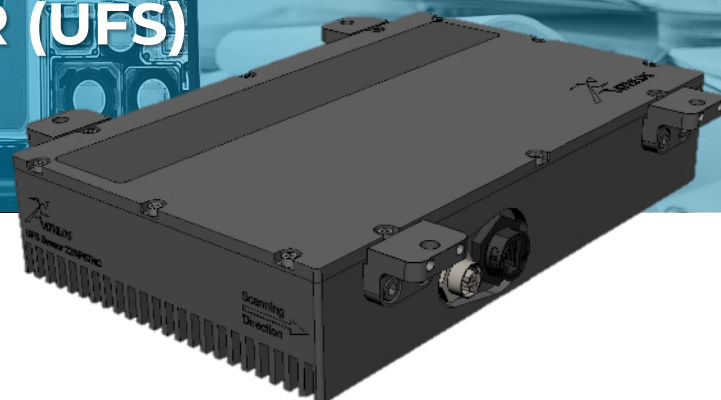
Direct Conversion x-ray imaging sensor for fast scanning applications

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 UFS-225IP67NC-44-TDI-HVS UFS-460IP67NC-44-TDI-HVS	153.6 230.4 460.8	mm	We can deliver any custom active length requested, up to 12m long.
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	Collimator 10-120kV is 2mm thick Cu Collimator 120kV – 360kV is 2mm thick W Custom made solution for LINACS (up to 9MeV; ask for more details if interested)
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



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



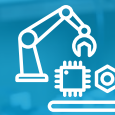
Oil & Gas Industry, Nuclear Power Stations, Cargo track & train inspection

- ▶ Weld inspection
- ▶ Pipe inspection for cracks, porosities and inclusions
- ▶ Tracks & Train cargo inspection



Pharmaceutical Industry

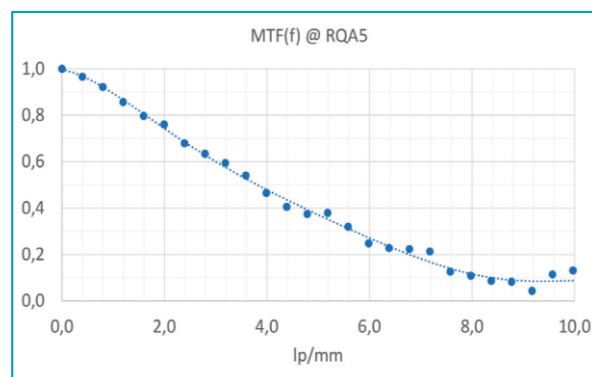
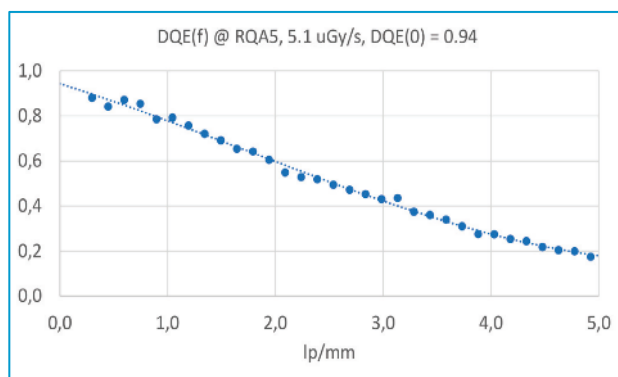
- ▶ Non-Destructive Testing (NDT) to Ensure product safety and quality.
- ▶ Foreign object detection
- ▶ Seal integrity and fill level inspection



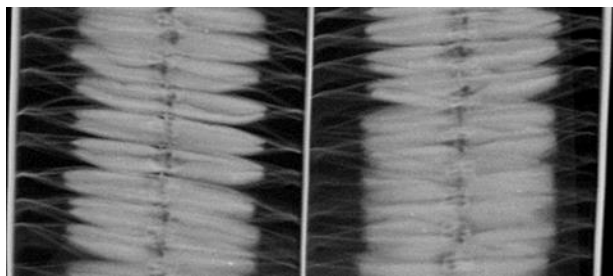
Electronic Components Industry

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

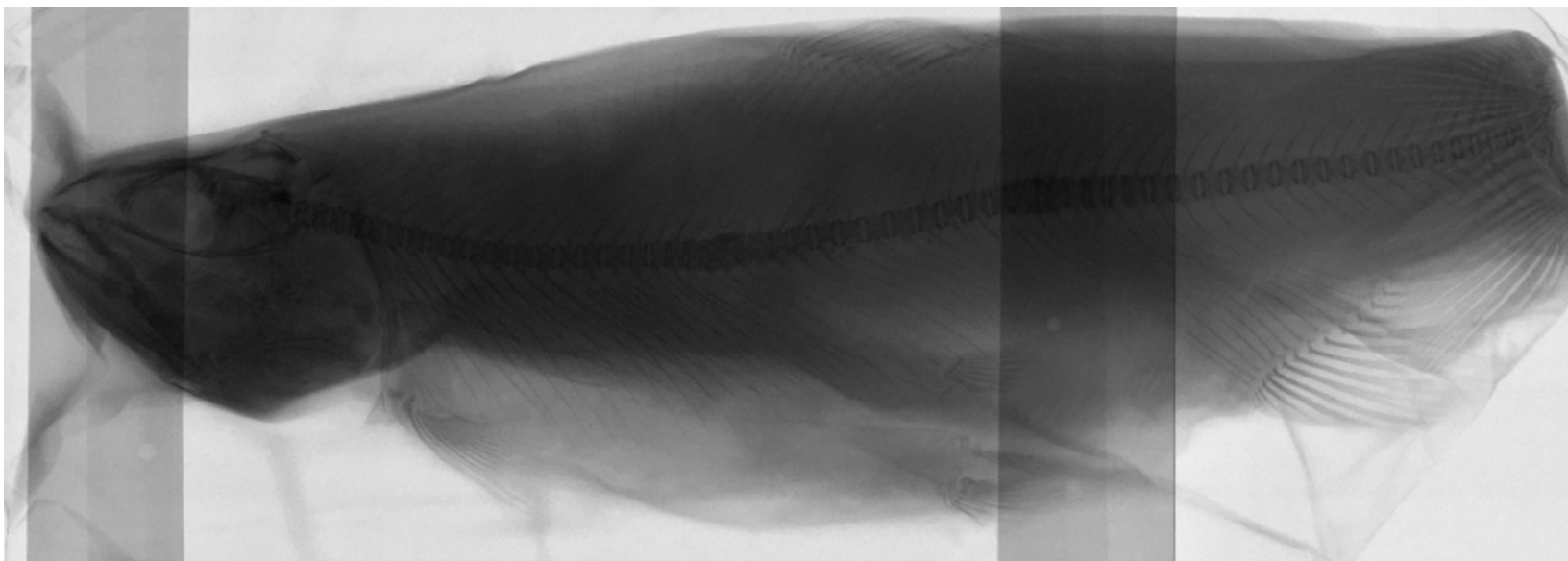
Key Performance Indicators	Benefit
Only 7mm distance from the detector to the top of the X-ray window	Accurate imaging
Mounting brackets flush with the X-ray window	Easy mounting Allows the detector surface to be very close to the inspected object
Mounting brackets are customizable on demand	UFS Sensor can be readily mounted without changes on the customer system
Application specific collimator material	Bronze for food inspection applications (Energy range 10kV-90kV) Tungsten (W) for weld inspection applications (Energy range 90kV – 360kV)
User selectable speed and resolution	Up to 28 m/min for 100 μ m resolution Up to 180 m/min for 200 μ m resolution Up to 1700 m/min for 400 μ m 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	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



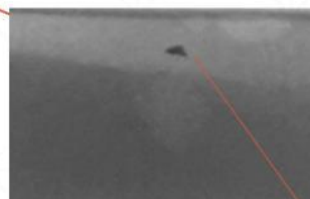
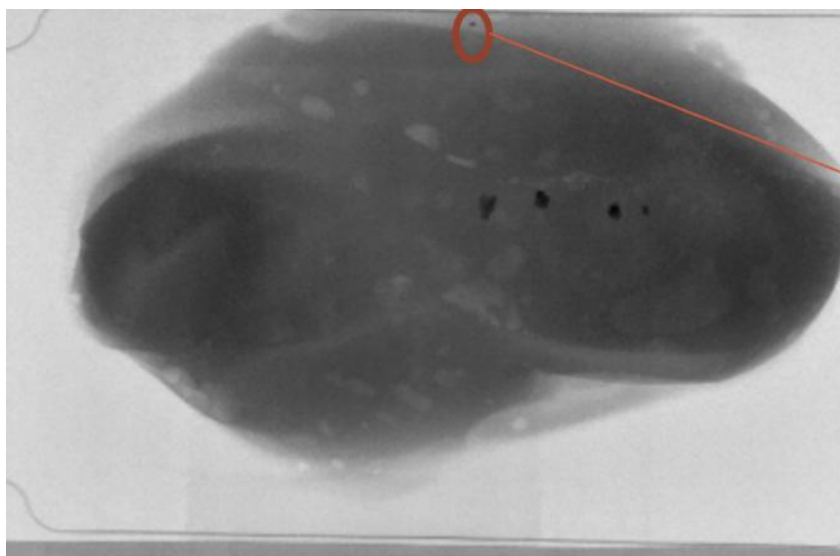
[Sample images can be viewed below.](#)



Food inspection (example): tea bags, 30m/min, 100um



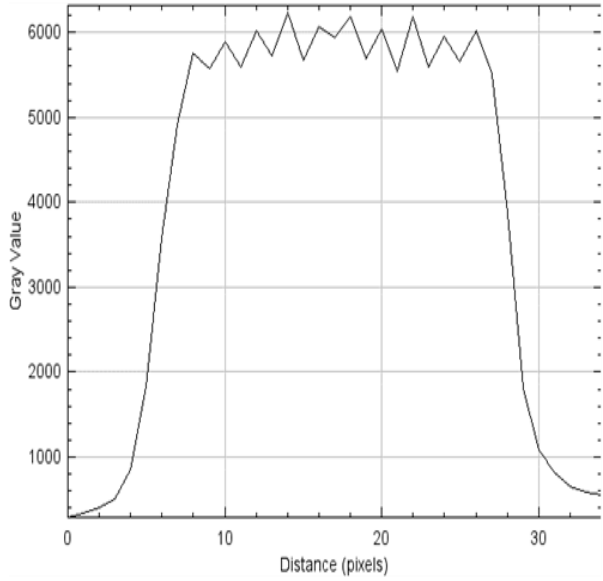
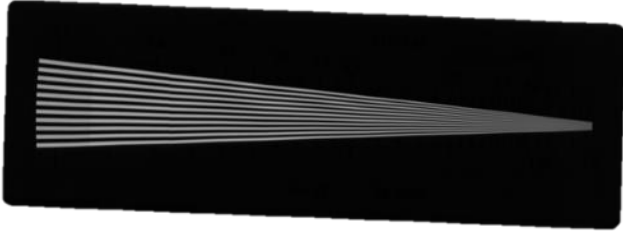
Food inspection (example): fish, 30m/min, 100um



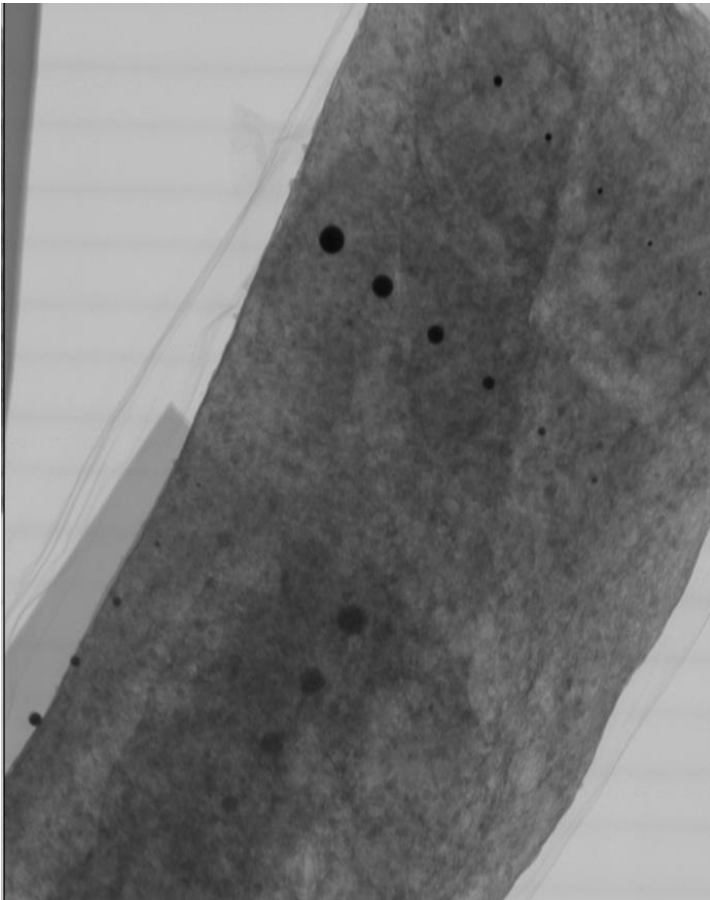
0.2mm thick metal foil foreign object



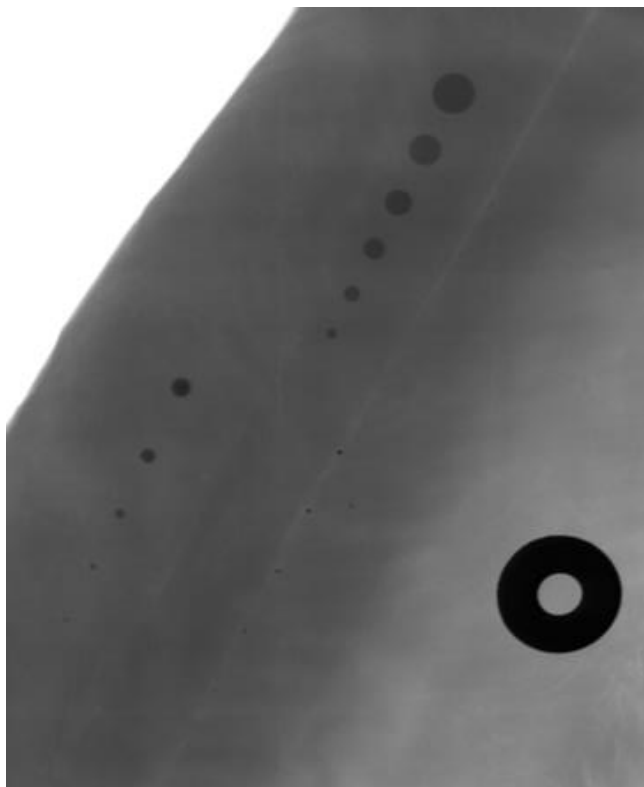
Food inspection (example): chicken fillet, 30m/min, 100um



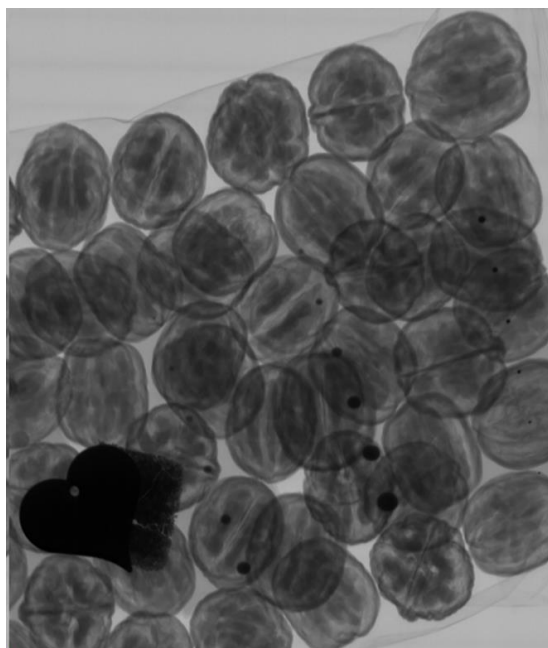
Resolution: Line pair phantom and profile, 30m/min, 100um, 5lp/mm visible



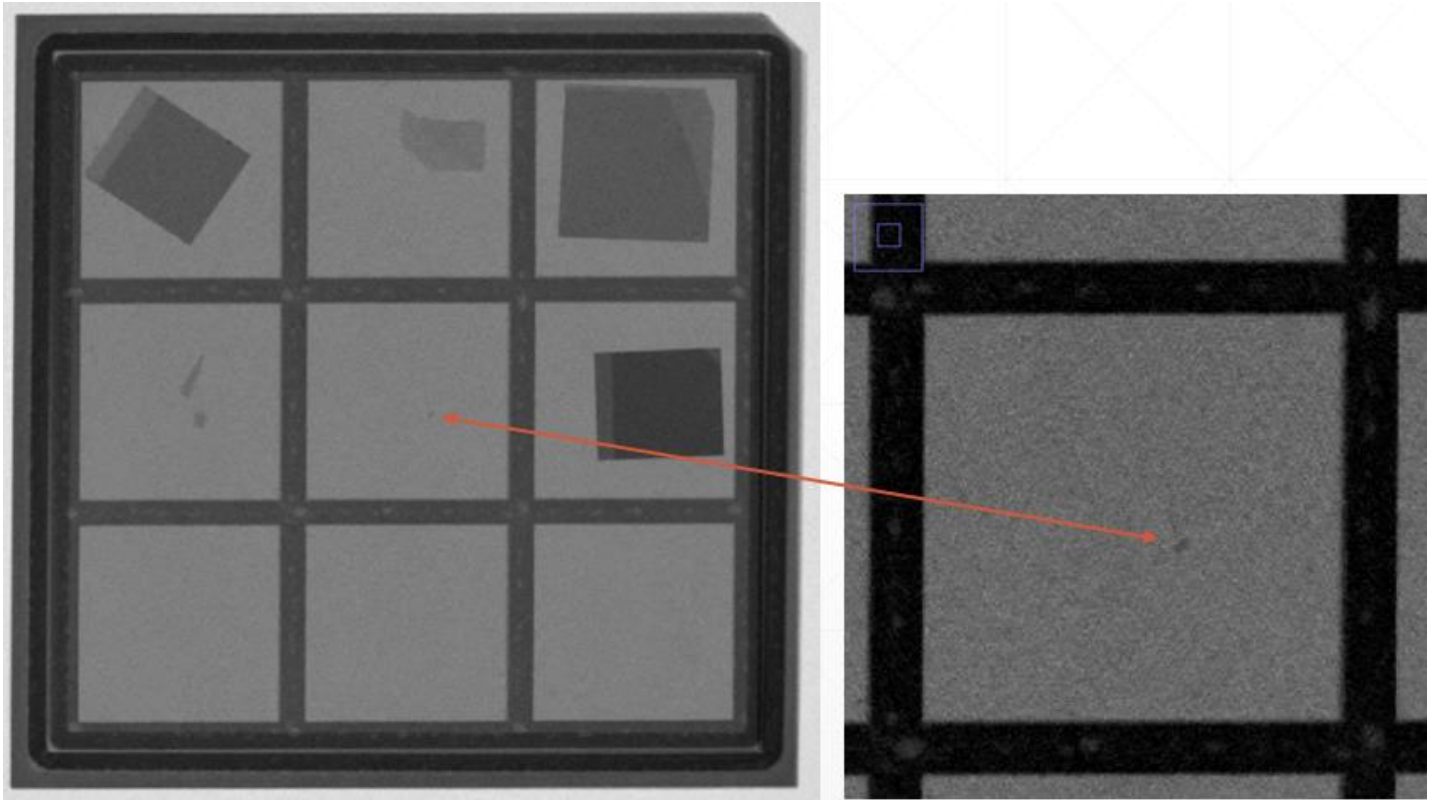
Food inspection(example): bread loaf (including JIMA foreign object test phantoms) 72m/min, 200um



Food inspection(example): salmon fillet, 72m/min, 200um, JIMA foreign test objects (5 steel (F2SB5-01), 5 quartz glass (FRQB5-02), 6 aluminum (FALP6-1.0))



Food inspection (example): walnuts, 72m/min (including JIMA foreign object test phantoms)



Electronics & semiconductor components inspection (example): waffles with components; foreign object is 0.15mm wide, 72m/min