Direct Conversion
Empowered X-RAY Imaging

РЕНТГЕНОВСКИЕ ДЕТЕКТОРЫ

XC-Thor FX8, FX10

ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ

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XC-Thor Series

The robust dual-energy XC-Thor series with its IP67 housing, brings high performance, fast imaging to the industrial sector.

Technology

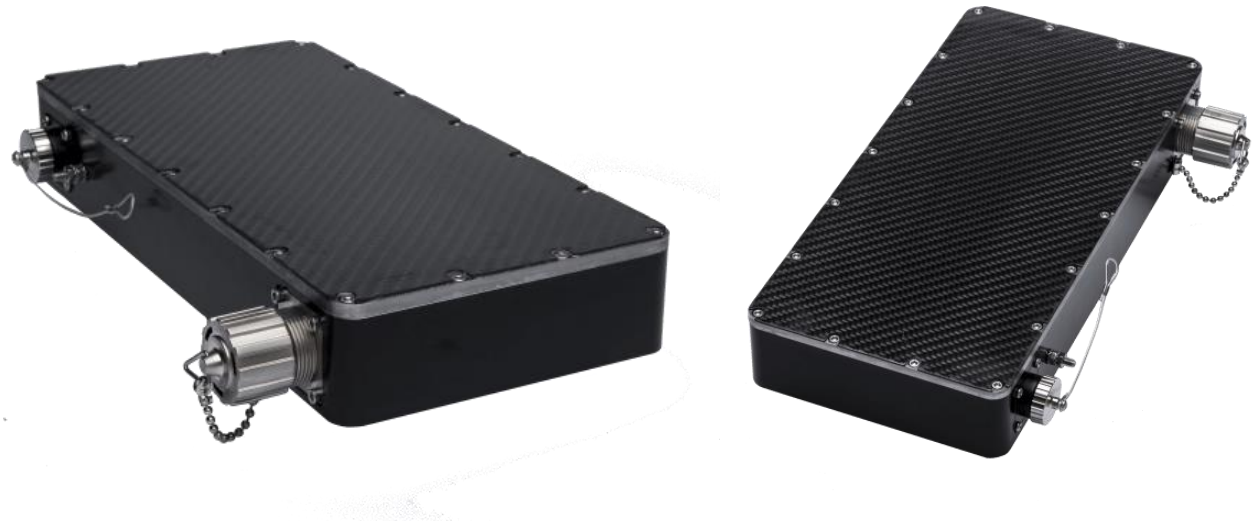
XC-Thor detectors are dual energy, photon-counting, direct conversion, X-ray sensors in a robust IP67 rated housing. Employing the very high efficiency direct conversion CdTe-CMOS technology at their core, XC-Thor detectors provide outstanding digital image quality for challenging environmental conditions. With the ability to be operated in Frame mode or Time Delayed Summation (TDS) mode this versatile detector can provide solutions for both scanning and single imaging requirements.

The XC-Thor range has the additional benefit of dual energy acquisition with anti-coincidence technology. During dual energy acquisition the energy of the detected photon is compared to two independent thresholds which are read out separately. The two energy sets can be used for material separation, opening the door to new imaging techniques in both medical and industrial X-ray. Anti-coincidence technology allows superior MTF through attributing each single photon signal to the correct pixel.

Application

With a combination of standard sensor active areas ranging in length from 10 cm to 15 cm; widths of 1.25 cm and 2.5 cm (larger sizes available on request); and 0.75 mm CdTe standard energy and 2 mm CdTe high energy versions, XC-Thor detectors are used in a broad range of applications.

Its robust build makes its particularly useful in weld integrity testing where the detector can be dropped into an existing mechanical scanning system, and field inspection applications where portability is important.



Integration

XC-Thor detectors are connected to the computer via a GigE interface. The detector comes with a fully flexible software development kit which runs on Windows XP, Vista and Windows 7. The detector is bundled with engineering software which exposes the various functionalities available

- Up to 300 kV, more with ultra-high kV options
- Unsurpassed levels of MTF and DQE
- 1000 fps at 100micron resolution

Technical Specification

Physical	
Dimension l x w x h (without optional cooling system)	178mm x 140mm x 46mm
Temperature Control	Internal Peltier temperature control
X-ray window	Carbon fiber, 1.5 mm thick
X-ray shielding	Depending on application

Sensor	
Sensor type	Dual-Energy Photon Counting CdTe-CMOS
Sensor thickness options	0.75mm : Standard energy applications 2mm : High energy applications
Active area XC-Thor FX8 XC-Thor FX10	80mm x 12.8mm 80mm x 25.6mm 100mm x 12.8mm 100mm x 25.6mm
Tile gap	100µm
Pixel size	100µm
Pixel fill factor	100%

Perfomance	
Imaging speed (Frame mode)	up to 300fps (1000fps burst mode)
Imaging speed (TDS mode)	up to 10000lps
Internal counter range	12 bits (Frame mode) 18 bits (TDS mode)
Counter output range (TDS mode)	16 bits Frame mode, 32 bits TDS mode
Detective Quantum Efficiency : DQE (0) typical	RQA5 spectra, 6µGy, SID 1m 0.75mm CdTe 75% 2.0mm CdTe 75%
Modulation Transfer Function : MTF	75% @ 2lp/mm 40% @ 5lp/mm
Lag	0% (after X-ray6uGy)
Ghosting	<0.1% 1 min after x-rays (6uGy)
Tube kV range	up to 300kVp (ultra high kV versions available on request)
External trigger available	Opto-coupled 5V, 12-24V with external resistor

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