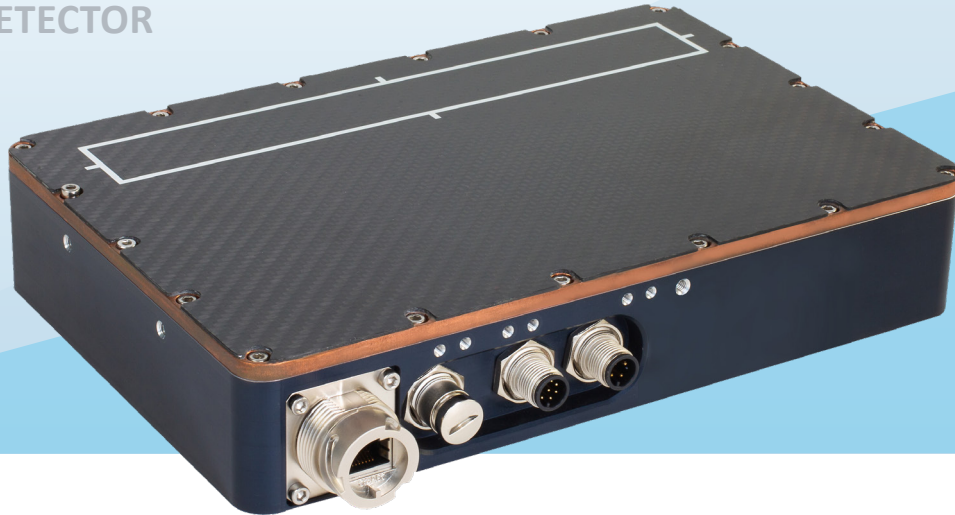


XC-THOR

PHOTON COUNTING
X-RAY DETECTOR



Industrial

Medical

HIGH EFFICIENCY DUAL ENERGY PHOTON COUNTING DETECTOR

The XC-Thor photon counting detector applies dual energy technology which can reveal flaws that are hard to see with single energy imaging.

It supports both scanning and frame mode outputs for flexibility to meet a variety of imaging challenges. Both modes can be operated at high speed, provide high efficiency at high resolution, resulting in superb image quality.

The XC-Thor is available in a variety of sizes and energy range capabilities to suit different applications.

FEATURES

Dual energy imaging for material discrimination

High resolution images

Noise-free read out

Long lifetime

Different energy range options

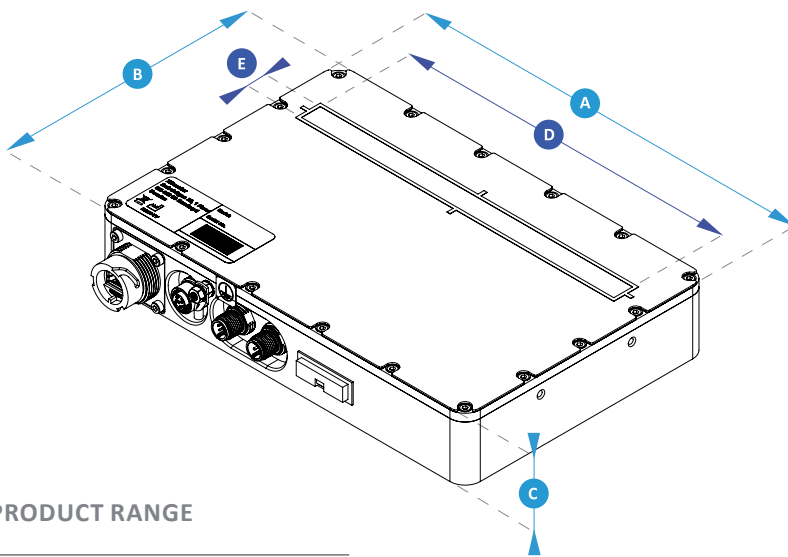
Suitable for super resolution imaging

High dynamic range

TECHNICAL SPECIFICATIONS

Direct Conversion X-ray detectors, unless specified otherwise, are components intended to be integrated into products by X-ray system manufacturers.

System manufacturers are responsible for qualifying and validating their products for their intended uses and meeting all applicable regulatory requirements.



PRODUCT RANGE

XC-THOR	100x25	200x25	300x25	400x25	50x50	100x50
ACTIVE AREA D x E mm ²	103 x 25	206 x 25	309 x 25	412 x 25	51 x 51	103 x 51
PHYSICAL DIMENSIONS A x B x C mm ² [1]	140 x 180 x 46	244 x 180 x 46	450 x 330 x 42	450 x 330 x 42	301 x 297 x 70	301 x 297 x 70
WEIGHT (kg) [2]	4	5	18.5	18.5	10 - 17	10 - 17
PIXEL MATRIX	1031 x 256	2063 x 256	3095 x 256	4127 x 256	515 x 513	1031 x 513
MAX SPEED (fps) [3]	390 / 6000	190 / 1300	130 / 6000	90 / 6000	390 / 6000	190 / 1300
MAX SPEED (lps) [3]	6000	6000	6000	6000	6000	6000
POWER CONSUMPTION (w)	100	200	300	400	180	240
ENERGY RANGE (kVp)						
160 = 40 - 160	✓	✓	✓	✓	✓	✓
300 = 40 - 300	✓	✓				

VARIANTS

A = Air Cooled	✓	✓	✓	✓	✓	✓
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[1] Excluding fans which add 51 mm to thickness C

[2] Depending on energy range and configuration

[3] Single energy sustained / 1 second burst @ 8 bits

COMMUNICATIONS

Data Interface	GigE
Power Supply	24 V
External Trigger Signals	Opto-coupled 5 - 24 V Start, Frame-sync

REGULATORY

CE pending

ENVIRONMENTAL TYPICAL

Ingress Protection	IP20
Operating Temperature	+15 to +35 °C
Operating Humidity Non-condensing	30 to 85 %
Storage Temperature	-10 to +50 °C
Storage Humidity Non-condensing	10 to 95 %

SENSOR

Technology	Photon Counting Dual Energy
Modes	Frame output and TDI Single Energy High Speed Dual Energy High Speed Dual Energy Spectral
Converter	Cadmium Telluride (CdTe)
Pixel Pitch	100 µm
Pixel Fill-factor	100 %
Tile Gap	100 µm
Count Rate High Speed Modes Spectral Mode	200 Mcnts / s / mm ² 20 Mcnts / s / mm ²
Pixel Depth	Up to 18 bits / frame
Active Area	See PRODUCT RANGE
Imaging Speed	See PRODUCT RANGE
Binning	2x2, 4x4
Frame Sum	Up to 500 frames
Temperature Control	Integrated thermo-electric with a PWM controlled fan

IMAGE QUALITY

	High Speed	Spectral
MTF @ 1.0 lp / mm	95 %	90 %
MTF @ 2.5 lp / mm	70 %	70 %
MTF @ 4.0 lp / mm	50 %	60 %
DQE @ 1.0 lp / mm	70 %	75 %
DQE @ 2.5 lp / mm	55 %	55 %
DQE @ 4.0 lp / mm	40 %	35 %
Lag	0 % (after X-ray 6 µGy)	
Ghosting	0 % (1 min after 6 µGy)	

MATERIALS

Energy Range	Housing	X-Ray Window
160	Al/Cu	Carbon Fiber
300	Al/Cu/WCu	Carbon Fiber

SOFTWARE INTERFACE

Direct	UDP Based
SDK Operating System	Windows 7 (onwards)



Direct Conversion
A VAREX IMAGING COMPANY

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