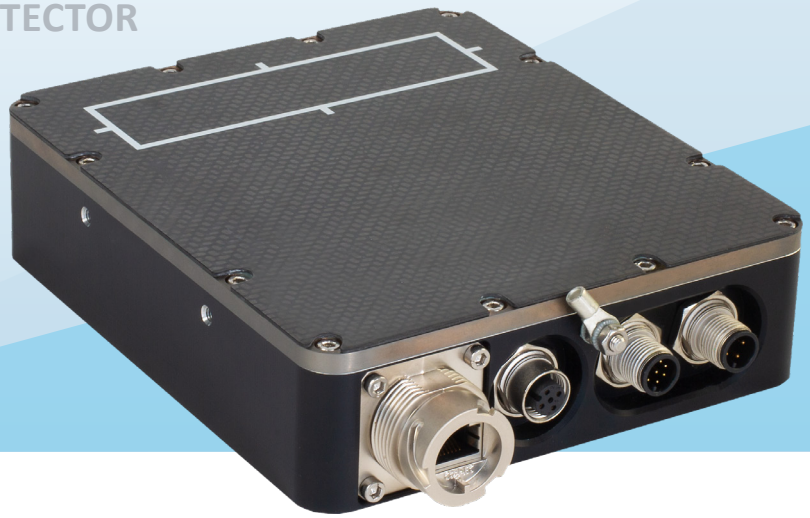
Direct Conversion
A VAREX IMAGING COMPANY

VAREX IMAGING

XC-THOR.HE

INDUSTRIAL PHOTON COUNTING X-RAY DETECTOR



Oil & Gas | **Nuclear** | **Vessel Inspection**

OPTIMISED FOR HIGH ENERGY PHOTON COUNTING DETECTOR

The robust dual energy XC-Thor.HE photon counting X-ray detectors are optimised to work in harsh and hostile environments.

They are designed especially for applications which require high energy X-ray or chemical isotope sources and need high resolution images. The detectors incorporate technologies aimed to maximise efficiency for applications such as the inspection of thick walled steel pipes reducing long inspections times.

High efficiency means shorter acquisition time – to reach the specific required image quality as defined by the inspection standards. Shorter acquisition time accelerates the whole inspection process and increases the throughput.

FEATURES

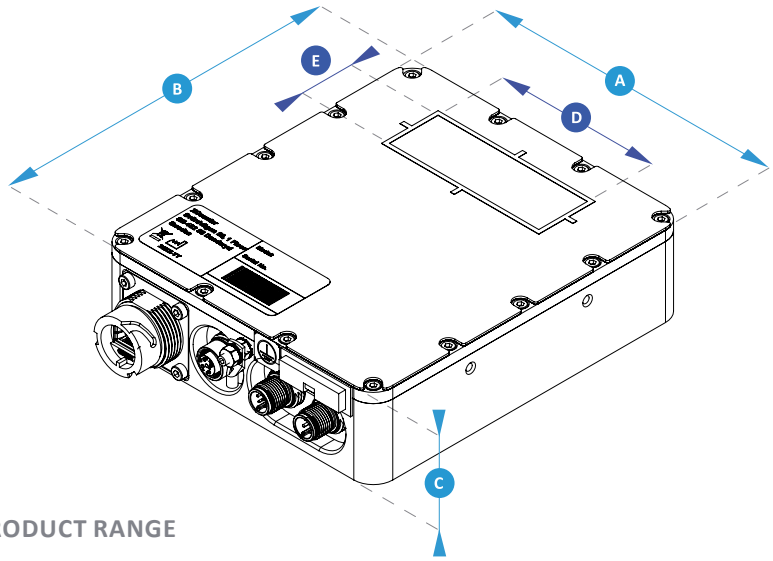
- Energies up to 1 MeV
- Robust IPX7* enclosure
- High resolution
- Optional scatter rejection
- Dual energy technology
- High efficiency
- Energy thresholding

* Not including the fans

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.HE	75x25	100x12 100x25	200x25	300x25	400x25	100x50
ACTIVE AREA D x E mm²	78 x 25	103 x 12 103 x 25	206 x 25	309 x 25	412 x 25	103 x 51
PHYSICAL DIMENSIONS A x B x C mm² [1]	140 x 180 x 46	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
WEIGHT (kg)	4	4	5	18.5	18.5	10 - 17
PIXEL MATRIX	788 x 256	1031 x 128 1031 x 256	2063 x 256	3095 x 256	4127 x 256	1031 x 513
MAX SPEED (fps) [2]	390 / 6000	390 / 6000	190 / 6000	130 / 6000	90 / 6000	190 / 1300
MAX SPEED (lps) [2]	6000	6000	6000	6000	6000	6000
POWER CONSUMPTION (w)	100	100	200	300	400	240
ENERGY RANGE (kVp)						
300 = 40 – 300		✓	✓	✓	✓	
450+ = 40 – 450+	✓	✓	✓	✓		✓
VARIANTS						
A = Air Cooled	✓	✓	✓	✓	✓	✓

[1] Not including heatsink and fans which add 71 mm

[2] Single energy, 8-bit, sustained / 1 sec burst

MECHANICAL

Dimensions	See PRODUCT RANGE
Housing Material	Aluminum / Tungsten-Copper
X-ray Window	Carbon Fiber

REGULATORY

CE pending

ENVIRONMENTAL TYPICAL

Ingress Protection	IPX7 *
Operating Temperature	+15 to +35 °C
Operating Humidity Non-condensing	30 to 90 %
Storage Temperature	-10 to +50 °C
Storage Humidity Non-condensing	10 to 95 %

* (not including fans)

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 / mm² 20 Mcnts / s / mm²
Pixel Depth	Up to 18 bits / frame
Active Area	See PRODUCT RANGE
Imaging Speed	See PRODUCT RANGE
Binning	2x2, 4x4, 8x8
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 % (1 min after 6 µGy)	

COMMUNICATIONS

Data Interface	1000Base-T
Power Supply	24 V
External Trigger Signals	Opto-coupled 5 - 24 V Start, Frame-sync

SOFTWARE INTERFACE

Direct	UDP Based
SDK Operating System	Windows 7 (onwards)

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