



# XC-THOR.10G

PHOTON COUNTING X-RAY DETECTOR



Medical

Industrial CT

**Industrial Scanning** 

## HIGH SPEED DUAL ENERGY PHOTON COUNTING DETECTOR

The XC-Thor.10G range of photon counting area detectors are designed for high speed and wellsuited for imaging fast moving objects and dynamic processes. The XC-Thor.10G delivers rapid X-ray inspection.

Dual energy capability improves image quality and enables material differentiation, and sophisticated, charge sharing correction technology provides accurate energy information.

### FEATURES

Dual energy with a single X-ray source Material discrimination, beam hardening correction, scatter rejection

Rapid imaging speed to up to 6000 fps

Noise free read-out

Fast read-out for less motion blur

Low-dose

Long lifetime

# **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.

SENSOR



#### **PRODUCT RANGE**

XC-THOR.10G	100x50	200x50	200x50.R	300x50	400x50
ACTIVE AREA	99 x 51	202 x 51	219 x 51	305 x 51	408 x 51
PHYSICAL DIMENSIONS [1]	301 x 297 x 68	301 x 297 x 68	301 x 297 x 68	333 x 450 x 61	333 x 450 x 61
WEIGHT (kg) [2]	10 - 17	10 - 17	10 - 17	18.5	18.5
PIXEL MATRIX	991 x 513	2023 x 513	2063 x 512	3055 x 513	4087 x 513
MAX SPEED (fps) [3]	750 / 6000	390 / 5500	390 / 5500	260 / 5500	190 / 5000
POWER CONSUMPTION (w)	180	240	240	600	800
ENERGY RANGE (kVp)					
160 = 40 - 160					
300 = 40 - 300		Ø			
VARIANTS	_		_	_	_
A = Air Cooled				0	0
B = Water Cooled					
[1]	[2]		[3]		
	[2]		[5]		
Excluding fans which add 51 mm to thickness C	Depending on energent and configuration	gy range	Single ener 1 second b	gy sustained / urst	

A VAREX IMAGING COMPANY

#### MECHANICAL

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

## COMMUNICATIONS

Data Interface **Power Supply** External Trigger Opto-coupled 12-24 V Signals

Technology	Photon Counting Dual Energy
Modes	Single Energy High Speec Dual Energy High Speec Dual Energy Spectra
Converter	Cadmium Telluride (CdTe
Pixel Pitch	100 µm
Pixel Fill-factor	100 %
Tile Gap	100 µm
<b>Count Rate</b> High Speed Modes Spectral Mode	200 Mcnts / s / mm 20 Mcnts / s / mm
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 far

f \* Typical values (actual values depend on configuration)

IMAGE QUALITY	High Speed	Spectral
MTF @ 1.0 lp / mm	90 %	90 %
MTF @ 2.5 lp / mm	70 %	70 %
MTF @ 4.0 lp / mm	50 %	50 %
DQE @ 1.0 lp / mm	70 %	70 %
DQE @ 2.5 lp / mm	55 %	55 %
DQE @ 4.0 lp / mm	40 %	40 %
Lag	(aft	0 % er X-ray 6 μGy)
Ghosting	(1 m	< 0.1 % (in after 6 μGy

#### 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 %
SOFTWARE INTERFACE	

Direct	UDP Based
SDK Operating System	Windows 7 (onwards)



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XC-Thor.10G Product Data Sheet 001.01\_ver3.0\_20210930

10GBase-SR

Start, Stop, Encoder

24 VDC