

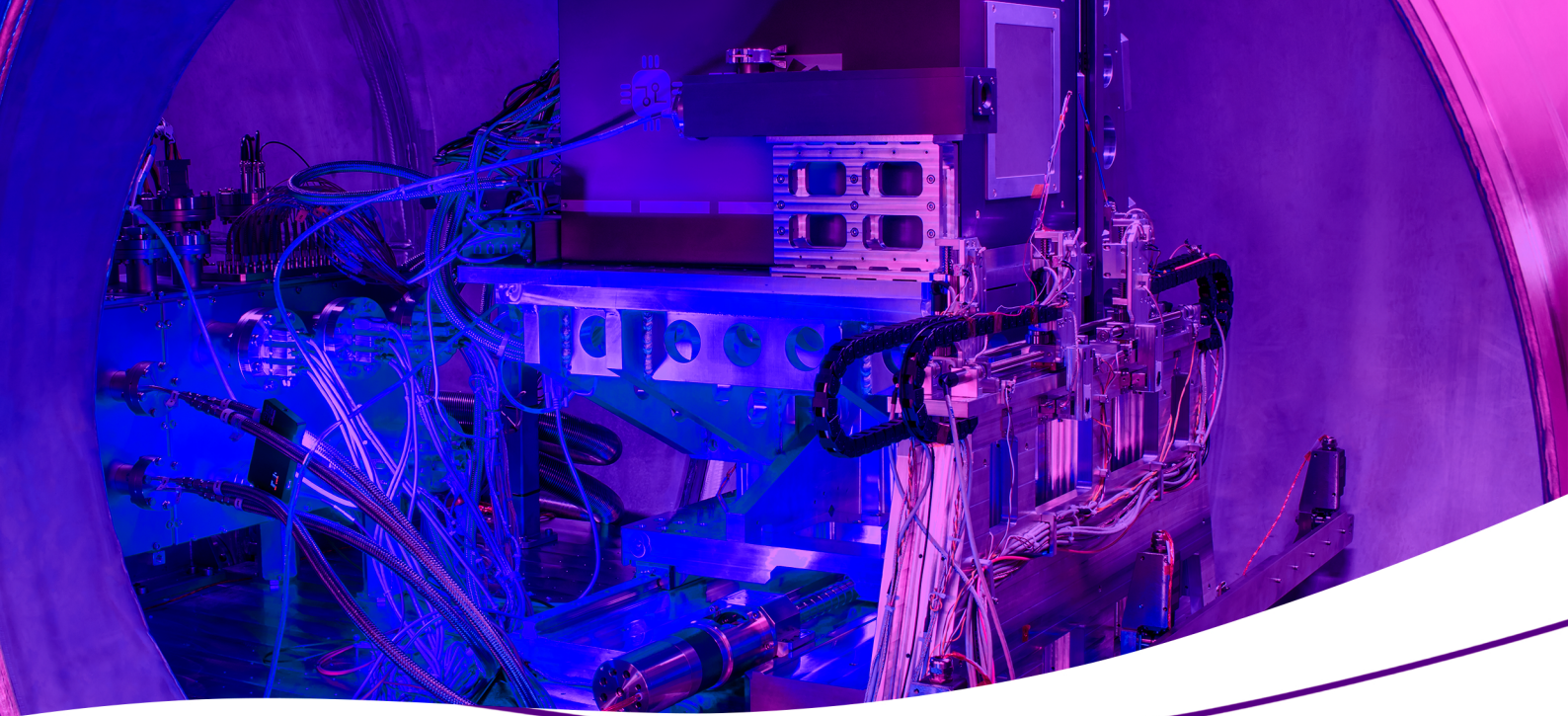
# $\pi$ tec

A Lumentum Company



# $\pi$ MEGA 540D

9.6 MPIXELS



PIMEGA-540D is a photo counting detector based on pixelated semiconductor sensors assembled over Medipix3RX ASICs. It brings together important features for direct X-Ray detection such as superior signal-to-noise ratio, single-photon counting, and high detection efficiency.

Main Features

- Noise-free hybrid photon counting
- High frame rate (up to 2000 Hz)
- 9.6 Mega Pixels
- High dynamic range (up to 24 bits)
- Continuous or sequential data acquisition
- Short readout time
- Low dead area
- High modularity
- Compatibility with EPICS
- Vacuum compatibility
- Good energy and spatial resolution
- Easy maintenance due to modularity

Number of ASICs	2 X 12		
Pixel size [µm²]	55 X 55		
Pixels arrangement	3106 X 3096		
Detection area [mm²]	170 X 170		
Sensor type/thickness [µm]	Si 300	Si 675	CdTe 1000
Threshold energy [KeV]	2-20 ≥ 25% efficiency	2-26.5 ≥ 25% efficiency	5-100 ≥ 60% efficiency
Readout mode	Sequential and continuous		
Readout time [µs]	492 (sequential mode) 0 (continuous mode)		
Depth dynamic range [bits]	12 and 24		
Frame rate @ 12bits [fps]	2000		
File format	HDF5 (32 bits)		
Trigger mode	Internal and External		
Module cooling	Water-cooled		
Vacuum compatibility [mBar]	Below 3x10 <sup>-3</sup>		
Count rate [cts/s/mm²]	7.3 x 10 <sup>8</sup> @ Si 300 µm		