

πtec
A Lumentum Company



πMEGA 135D

2.4 MPIXELS



PIMEGA-135D is a photo counting detector based on pixelated semiconductor sensors assembled over 36 Medipix3RX ASICs. This 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)
- 2.4 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	6 X 6		
Pixel size [μm^2]	55 X 55		
Pixels arrangement	1553 X 1548		
Detection area [mm^2]	85 X 85		
Sensor type/thickness [μm]	Si 300	Si 675	CdTe 1000
Threshold energy [KeV]	2-20 \geq 25% efficiency	2-26.5 \geq 25% efficiency	5-100 \geq 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 3×10^{-3}		
Count rate [cts/s/ mm^2]	7.3×10^8 @ Si 300 μm		

