

X-ray FDS Detector



High resolution superior X-ray imaging

The detector offers 8.7mm x 6.7mm up to 50mm x 40mm active area and 6 megapixel resolution. A custom scintillator is deposited onto the camera in order to allow 1keV up to 300keV.

Array versions with multiple modules are also available, delivering up to 24 megapixel resolution. The X-ray FDS 6.02MP delivers up to 1.5 fps full resolution or 6 fps in binning 2 x 2 allowing real time acquisition routine.

A built in shutter allows smear free, shutterless acquisition even with exposure time down to microsecond range. Frame rate of >10 fps can be achieved when used in local sub area mode or line scan mode.

A device server driver control allows remote acquisition through existing GUI interface.

The detectors have a native 14-bit acquisition mode and 18-bit extended dynamic range mode.

Applications

X-ray microtomography
X-ray PCB testing
Phase contrast imaging

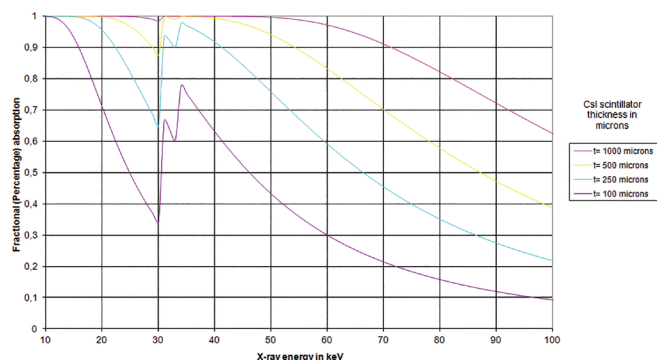
Key Features

- | Input sizes : single module
50 x 40mm
- | Array Sizes : multiple modules
100 x 80mm / 200 x 40mm
- | Scintillator
Gadox:Tb for operation from 1-55 keV,
structured CSI scintillator from 20-300 keV
- | Simultaneous integration / readout enabling
100% duty cycle acquisition
- | OEM versions available

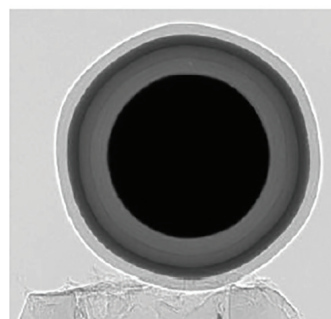
X-ray source qualification
X-ray radiography
X-ray mirror and optics alignment

X-ray FDS Detector

Characteristics	FDS 1.41MP	FDS 2.38MP	FDS 6.02MP
Resolution	1360 x 1040	1940 x 1460	2750 x 2200
Input Size (mm)	8.77 x 6.71 14.35 x 10.73 19.93 x 15.23 30.70 x 23.48	8.81 x 6.63 22.05 x 16.57 35.24 x 26.52	12.50 x 10.00 31.25 x 25.00 50.00 x 40.00
Input Size (µm)	6.45 x 6.45 10.32 x 10.32 14.65 x 14.65 22.57 x 22.57	4.54 x 4.54 11.35 x 11.35 18.16 x 18.16	
Preview Mode Bin 2x2 at 25MHz	>25 fps	>14 fps	>6 fps
Frame Rate	7.5 fps	3.7 fps	1.6 fps
Full Well Capacity	22,000 electrons	13,000 electrons	
Read Out Noise (Interpolated Noise Reduction)	6 - 7 electrons (3 - 4 electrons)	5 - 6 electrons (3 - 4 electrons)	
Dark Current	0.06 electron/pixel/second	0.00180 electron/pixel/second	
Sensor Temperature (°C)	Operating at -20°C		
Digitization	14-bit		
Peak QE	62%	77%	
Exposure	5 microseconds up to 35 minutes		
Extended Dynamic Range	18-bit digitization		
Extended Full Well Capacity	352,000 electrons	208,000 electrons	



X-ray absorption efficiency



Graphite pellet 1µm resolution