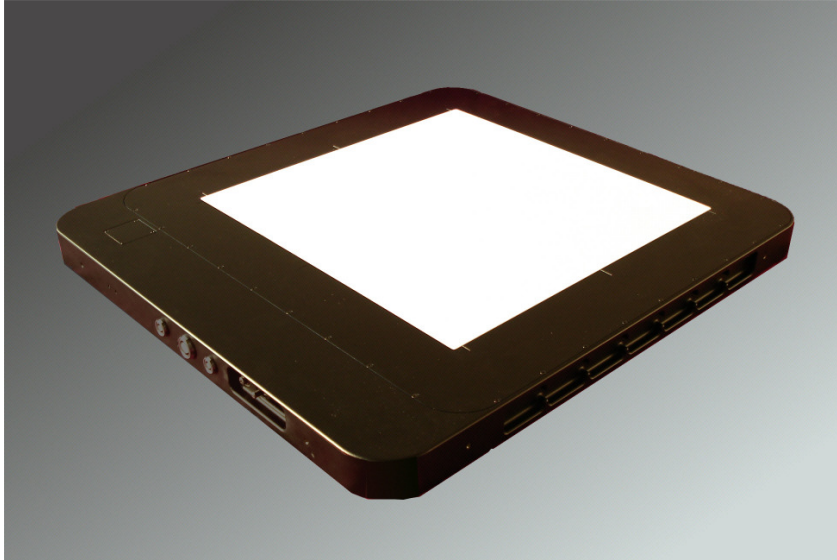


XRD 1620 AN CS

Digital X-Ray Detector



Overview

The XRD 1620 AN CS is a digital X-Ray detector based on a 16" amorphous silicon sensor operating as a two-dimensional photodiode array. X-Rays are converted into light using a Kodak Kasei DRZ Standard, DRZ Plus, LanexTMFine, or a CsI scintillator. The information is digitized in 16 bits to achieve highest dynamic range and contrast. With a pixel size of 200 μm , an image size of 2048 x 2048 pixels, and a frame rate of 3.75 Hz, the detector is designed to fulfil the requirements of a variety of Industrial and Medical Applications.

The XRD 1620 AN series provides the advantage of synchronization between the detector and X-Ray source or manipulator by using an external trigger signal.

The XRD 1620 AN series detectors are connected to a PCI computer, with the data transferred via a customized parallel interface.

The XRD 1620 AN, the XRD-EP Power Supply Unit and the XRD-FG PCI frame grabber board are optimized for the highest performance. The image integration time is variable between 266.7 ms and 5 sec in steps of 1 ms (internal timer) or can be set between 266.7 ms and 2 sec in eight fixed steps (free running).

Features and Benefits

- Complete Digital X-Ray Detector
- Monolithic Flat Panel
- > 4 Million Pixels
- 200 μm Pixel Pitch
- 65.536 Grey Levels
- Ultra High Sensitivity
- Live Images @ 3.75 fps
- Suitable for a wide range of X-Ray energies
- Selectable Gain Setting

Applications

- Radiotherapy Simulation and Portal Imaging
- Non-Destructive Testing
- 3D CT Reconstruction
- Scientific & Medical Applications

The XRD image acquisition and demonstration software and the XRD image acquisition software library are included. The software library can be used to integrate the specific detector functions into various types of image processing software. The library supports functions for

- acquisition of a single frame or a sequence
- selection of integration times
- selection of gain setting
- selection of trigger modes
 - Free Running;
 - External Trigger Source
 - Internal Timer
 - Software Trigger
- calibration procedures to acquire offset and gain correction files
- perform corrections for
 - Offset correction
 - Multiple Gain Correction with up to 10 signal levels
 - Pixel Correction

Panel Specification	
Scintillator screen* (standard)	Lanex™Fine / DRZ Standard / DRZ Plus
(optional)	CsI
Pixel number	2048 x 2048
Active pixel number	2024 x 2024
Pitch	200 µm
Total area	409.6 x 409.6 mm ²
Diode capacity	2.1 pF
Electronics Specification	
Charge amplifier	16 x 128 channel ASIC
Feedback capacitance (gain)	0.25 pF, 0.5 pF, 1 pF, 2 pF, 4 pF, 8 pF
ADC:	16 x 16bit A/D @ 1MSps
Integration time (minimum):	266.7 ms
Non-linearity ¹	< 1 % (10 % to 90 % FSR)
Detector Specification	
Dynamic range ¹	> 75 dB
Response Non Uniformity ¹	±2 % (10 % to 90 % FSR)
Image lag: (standard)	< 8 % (1 st frame)
(CsI-option)	< 10 % (1 st frame)
Frame rate (max)	3.75 Hz
Radiation energy	40 keV – 15 MeV (XRD 1620 ANCS) 20 keV – 15 MeV (XRD 1620 ANCS)
Detector housing	672 x 599 x 44 mm ³
For CsI option (7.5 kVp, 20 mm Al filtration, 7 mm Al HVL)	
MTF (0.5 lp / mm)	80% (typical 86%)
MTF (2.0 lp / mm)	30% (typical 45%)
DQE (0.5 lp / mm)	56% (typical 65%)
DQE (2.0 lp / mm)	28% (typical 37%)
Requirements	
Power supply	XRD-EP (95510254H)
Frame grabber	XRD-FG (95510214H)
PC-requirements**	CPU > 3 GHz
	RAM > 1 GB
	PCI-X Bus
	Windows™2000, XP Professional

¹At 1pF Gain and 7.5 frames per second
 *Lanex™ is a registered trademark of Eastman Kodak Company; DRZ is a trademark of Kasei Optronix
 **Windows™2000 and Windows™ XP are registered trademarks of Microsoft Cooperation

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