OVERVIEW

Varex Imaging XRD 0822 digital Flat Panel X-ray Detector (FPD) is available in two configurations - AO and AP.

XRD 0822 AO provides over 78 dB of dynamic range and frame rates up to 30 frames per second (fps). The enhanced performance XRD 0822 AP offers over 88 dB of dynamic range and frame rates up to 100 fps via several read-out modes. Both detectors support a broad range of energy levels from 20 kV to 15 MV and are available with several shielding and scintillator options.

Rapid system integration is accomplished via Gigabit Ethernet data communication, integrated trigger and X-ray synchronization circuitry, and a comprehensive software library for image acquisition and processing.

Wide energy range, variable frame rates and multiple shielding options allow the XRD 0822 to meet demanding component requirements in various applications such as industrial non destructive testing, radiation therapy for cancer treatment, as well as veterinary and life and physical science.

FEATURES AND BENEFITS

• Radiation-hardened for harsh environments
• Real-time imaging
• 200 µm pixel pitch
• Up to 65,536 gray levels
• X-ray energies from 20 kV to 15 MV
• Selectable gain settings
• Gigabit Ethernet interface

APPLICATIONS

• Radiation Therapy, Radiosurgery, & Proton Therapy
• Industrial Non Destructive Testing & Evaluation
• Veterinary
• Life & Physical Science

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Technical Specifications

SENSOR
Panel .................. Single substrate amorphous silicon active TFT-diode array
Scintillator .............. Direct deposition CsI:Ti or various Gd$_2$O$_2$S:Tb (GOS) fluorescent screens
Pixel Matrix ............. 1024 × 1024 @ 200 µm pitch

ELECTRONICS
Amplifiers ............... 8 × 128 channel custom low noise ASICs with 2 (AO) or 6 (AP) user selectable gain settings
ADC ..................... 14-bit (AO), 16-bit (AP)

Read-out Modes Matrix | Pixel (µm$^2$) | AO | AP
Square | 1024 × 1024 | 200 × 200 | 15 | 25
      | 512 × 512 | 400 × 400 | 30 | 50
Rectangular | 1024 × 512 | 200 × 400 | n/a | 50
      | 1024 × 256 | 200 × 200 | n/a | 100
Sectional | 1024 × 512 | 200 × 200 | n/a | 50
      | 1024 × 256 | 200 × 200 | n/a | 100

MECHANICAL
Size ..................... 295 mm (w) × 360 mm (l) × 22 mm (h)
Weight ................... 3.7 kg
Housing .................. Aluminum
Shielding ................ Integrates with shielding cassette for high energy applications (optional)

COMMUNICATIONS
Data I/F .................. Gigabit Ethernet Vision
X-ray I/F .................. Integrated X-ray trigger control
Software .................. Support for 32 and 64 bit Windows® OS

IMAGING PERFORMANCE
DQE ..................... 75% (0 cy/mm), 58% (1 cy/mm), 37% (2 cy/mm) for RQA5 with CsI
MTF ..................... 67% (1 cy/mm), 33% (2 cy/mm) with CsI
Lag ..................... <8% 1st frame
Dynamic Range ............. >78 dB (AO), >88 dB (AP)
Energy .................. 20 kV – 15 MV

ENVIRONMENTAL
Temperature ................ 10 – 40°C (operating), -10 – 50°C (storage)
Humidity .................. 10 – 90% RH (non-condensing)
Ingress .................. IP-65 rated (total dust and low pressure water jets protection)
Vibration .................. IEC/EN 60068-2-6(10-150 Hz, 0.5 g)
Shock ...................... IEC/EN 60068-2-27(11 ms, 2 g)

POWER
Supply .................. 100 – 240 VAC, 50/60 Hz
XRD-EPS Power Supply 215 W
Dissipation ................. 25 W

REGULATORY
Standards ................ UL-60601-1, IEC/EN-60601-1, IEC/EN-60950-1
Regulations ................ CE, RoHS

1 Unless otherwise specified, Varex Imaging Flat Panel X-ray Detectors 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.

Contents in this document are subject to change without notice.