

## XRD 0822 AO, AP



## Flat Panel X-ray Detectors

**Features and Benefits**

- Radiation-hardened for harsh environments
- Real time imaging
- 200  $\mu\text{m}$  pixel pitch
- Up to 65,536 gray levels
- X-ray energies from 20 kV – 15 MV
- Selectable gain settings
- Gigabit Ethernet interface

**Applications<sup>1</sup>**

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

## Superior Image Quality High Dynamic Range

**Overview**

The PerkinElmer XRD 0822 Digital X-ray Flat Panel Detectors (FPDs) are part of the PerkinElmer family of 8-inch (20 cm) field of view amorphous silicon (a-Si) digital X-ray FPDs.

Two models of the PerkinElmer XRD 0822 digital X-ray FPDs are available: The PerkinElmer 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 100fps via several read-out modes. Both detectors support a broad range of energy levels from 20 keV–15 MeV 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.

The wide energy range, variable frame rates and shielding options allow the XRD 0822 to meet the component requirements of applications<sup>1</sup> such as industrial non destructive testing, radiation therapy for cancer treatment, as well as veterinary and life and physical science.

We have over 20 years of experience partnering with OEMs integrating FPDs into demanding X-ray applications and can customize our product to meet your specific requirements. Let our digital imaging expertise work for you.

# XRD 0822 AO,AP

Sensor	
Panel	Single substrate amorphous silicon active TFT/diode array
Scintillator	Direct deposition CsI:Tl or various Gd <sub>2</sub> O <sub>2</sub> 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 Mode	Matrix	Pixel (µm <sup>2</sup> )	fps	
			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 × 800	n/a	100
Sectional	1024 × 512	200 × 200	n/a	50
	1024 × 256	200 × 200	n/a	100

Mechanical	
Size	29.5 cm (w) × 36.0 cm (l) × 2.2 cm (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% 1 <sup>st</sup> 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)

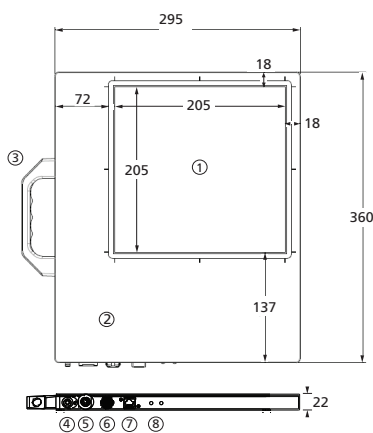
Power	
Supply	100 – 240 VAC, 50/60 Hz XRD-EPS Power Supply 215 W
Dissipation	25 W

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

1: Unless otherwise specified, PerkinElmer 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.

## Mechanical Characteristics (Dimensions in mm)



- ① Active sensor area
- ② Electronics area
- ③ Removable handle
- ④ Ground stud
- ⑤ Power connector
- ⑥ X-ray trigger connector
- ⑦ Ethernet connector (RJ45)
- ⑧ Diagnostic LEDs

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