XRD 1622 AO, AP
Flat Panel Detectors

VAREX
I M A G I N G

Superior Image Quality
High Dynamic Range

The Varex Imaging XRD 1622 Flat Panel X-ray Detectors are the part of the Varex Imaging family of 16-inch (41 cm) field of view amorphous silicon (a-Si) digital X-ray FPDs.

OVERVIEW

Two models of the Varex Imaging XRD 1622 digital Flat Panel X-ray Detectors (FPDs) are available: The Varex Imaging XRD 1622 AO provides over 74 dB of dynamic range and 1 frame per second (fps). The enhanced performance Varex Imaging XRD 1622 AP offers over 87 dB of dynamic range and frame rates up to 4 fps via multiple read-out modes. Both detectors support a broad range of energy levels from 20 kV – 16 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.

The wide energy range, variable frame rates and shielding options allow the Varex Imaging XRD 1622 to meet the component requirements of applications[1] 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.

FEATURES AND BENEFITS

- Radiation-hardened for harsh environments
- 200 µm pixel pitch
- Up to 65,536 gray levels
- X-ray energies from 20 kV – 16 MV
- Selectable gain settings
- Gigabit Ethernet interface

APPLICATIONS[1]

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

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SENSOR

Panel . . . . Single substrate amorphous silicon active TFT/diode array
Scintillator . . . . CsI:Tl or various Gd_2O_2S:Tb (GOS) fluorescent screens
Pixel Matrix . . . . 2048 × 2048 @ 200 µm pitch

ELECTRONICS

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

Read-out Mode	Matrix	Pixel (µm²)	AO	AP
Square	2048 × 2048	200 × 200	1	1
	1024 × 1024	400 × 400	n/a	4
Rectangular	2048 × 1024	200 × 400	n/a	2

(fps column header above AO/AP)

MECHANICAL

Size . . . . 50.0 cm (w) × 56.0 cm (l) × 2.2 cm (h)
Weight . . . . 8.8 kg
Housing . . . . Aluminum
Shielding . . . . Integrates with shielding cassette for high energy applications (optional)

MECHANICAL CHARACTERISTICS

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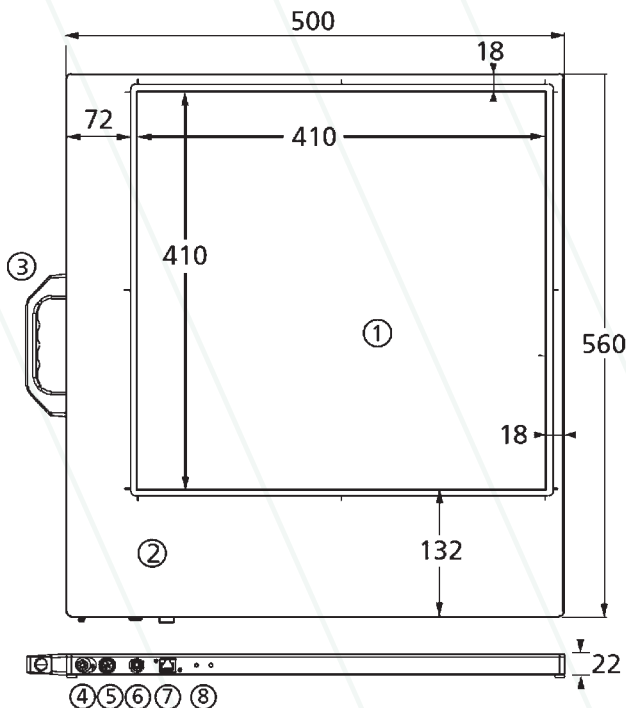
① Active sensor area
② Electronics area
③ Removable handle
④ Ground stud
⑤ Power connector
⑥ X-ray trigger connector
⑦ Ethernet connector (RJ45)
⑧ Diagnostic LEDs

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

MTF . . . . 63% (1 cy/mm), 31% (2 cy/mm) with CsI
Lag . . . . < 6% 1st frame
Dynamic Range . . . . > 74 dB (AO), > 87 dB (AP)
Energy . . . . 20 kV – 16 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-LPM Power Supply 40 W
Dissipation . . . . 32 W

REGULATORY

Standards EN-61010-1, EN-61326-1
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.

VAREX IMAGING

The data in this document is for reference only.