

XRD 1642 AP

Flat Panel Detector



Real-time Imaging
High Dynamic Range

OVERVIEW

The Varex Imaging XRD 1642 AP offers over 87 dB of dynamic range and frame rates up to 100 fps via multiple read-out modes. A broad range of energy levels from 40 keV – 16 MeV are supported 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 1642 AP to meet the component requirements of applications¹ such as industrial non-destructive testing, radiation therapy, as well as life and physical science.

We have over 20 years of experience partnering with OEMs integrating Flat Panel Detectors 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
- 400 μm pixel pitch
- Up to 65,536 gray levels
- X-ray energies from 40 keV – 16 MeV
- Selectable gain settings
- Gigabit Ethernet interface

APPLICATIONS¹

- Radiotherapy, Radiosurgery & Proton Therapy
- Industrial Non Destructive Testing and Evaluation
- 3D Cone Beam CT

Technical Specifications

SENSOR

Panel Single substrate amorphous silicon active TFT/diode array
 Scintillator CsI:Tl or various Gd₂O₂S:Tb (GOS) fluorescent screens
 Pixel Matrix 1024 × 1024 @ 400 μm pitch

ELECTRONICS

Amplifiers 8 × 128 channel custom low noise ASICs with 6 user selectable gain settings

ADC 16 bit

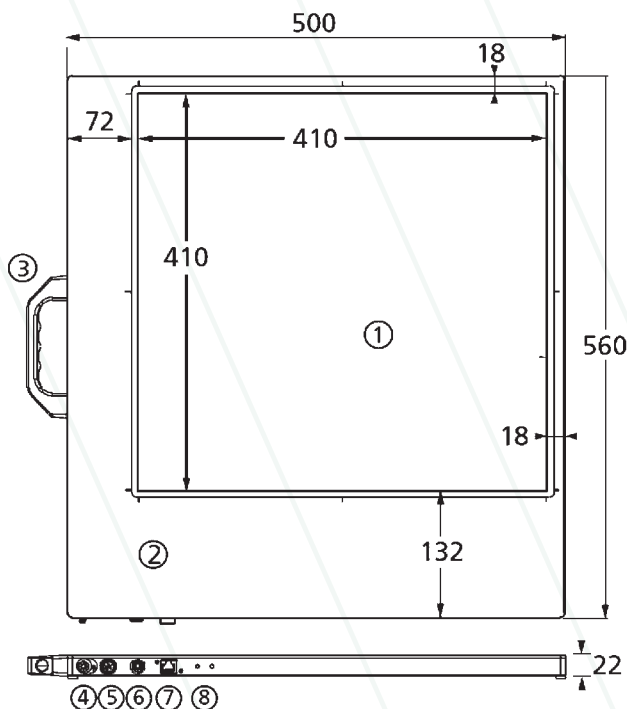
Read-out Mode	Matrix	Pixel (μm ²)	fps
Square	1024 × 1024	400 × 400	15
	512 × 512	800 × 800	30
Rectangular	1024 × 512	400 × 800	30
Sectional	1024 × 512	400 × 400	30
	1024 × 256	400 × 400	50
	1024 × 128	400 × 400	100

MECHANICAL

Size 50.0 cm (w) × 56.0 cm (l) × 2.2 cm (h)
 Weight 7.5 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
 X-ray I/F Integrated X-ray trigger control
 Software Support for 32 and 64 bit Windows® OS

IMAGING PERFORMANCE

Lag < 8% 1st frame
 Energy 40 keV – 16 MeV
 MTF 63% (0.5 cy/mm), 31% (1 cy/mm) for RQA5 with CsI

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 24 W

REGULATORY

Standards IEC/EN-60601-1
 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.



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