

XRD 1621 xN ES

Industrial Flat Panel Detector



Superior Image Quality High Dynamic Range

Varex Imaging XRD 1621 Flat Panel X-ray Detector (FPD) is a member of the Varex Imaging family of 16-inch (41 cm) field of view amorphous silicon (a-Si) FPDs.

OVERVIEW

Varex Imaging XRD 1621 FPDs provide a dynamic range exceeding 88 dB and frame rates up to 30 frames per second. XRD 1621 xN supports a broad range of energy levels from 20 kV to 16 MV and is available with several scintillator options. System integration is accomplished via a frame grabber with a customized fiber-optical interface. The frame grabber is designed to perform on-board corrections including Multiple Gain Correction at up to 10 signal levels. Rapid system integration is accomplished via optical data communication, integrated trigger and X-ray synchronization circuitry. A comprehensive software library for image acquisition and processing is also provided.

The wide energy range, variable frame rates and scintillator options allow the Varex Imaging XRD 1621 xN to meet the component requirements of industrial non-destructive testing, as well as life and physical science applications¹.

FEATURES AND BENEFITS

- 200 μm pixel pitch
- 65,536 grey levels (16-bit ADC)
- Ultra high sensitivity
- Live images @ 30 fps
- Suitable for a wide range of X-ray energies
- Selectable gain setting
- Galvanic isolation by fiber-optical interface

APPLICATIONS¹

- Non-destructive testing
- 3D Cone Beam CT
- Metrology
- Scientific applications

TECHNICAL SPECIFICATIONS

SENSOR

Panel	Single substrate amorphous silicon active TFT-diode array
Scintillator	CsI:Tl or various Gd ₂ O ₂ S:Tb
Pixel Matrix	2048 × 2048 @ 200 μm pixel pitch
Total Area	409.6 × 409.6 mm ²

ELECTRONICS

Amplifiers	Low noise ASICs with up to 6 user selectable gains		
ADC	16-bit		
Read-out Modes	Matrix	Pixel (μm ²)	fps
	2048 × 2048	200 × 200	15
	1024 × 1024	400 × 400	30

MECHANICAL

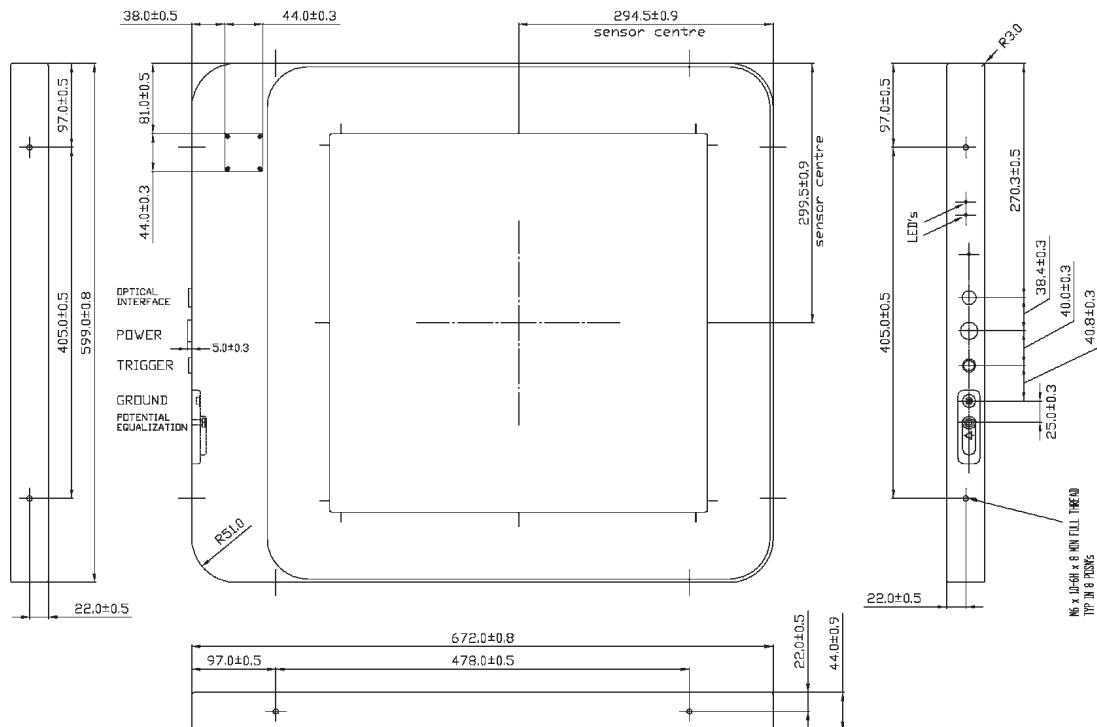
Size	672 mm × 599 mm × 44 mm
Weight	25 kg
Housing	Aluminum with Aluminum (1621 AN) or carbon-fiber (1621 CN) entrance window

COMMUNICATION I/F

Data I/F	Fibre optic to PCIe frame grabber
X-ray I/F	Integrated Trigger control
Software	Support for 32 and 64 bit Windows® OS
Laser	Class 1

MECHANICAL CHARACTERISTICS

(Dimensions in mm)



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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IMAGE PROCESSING

Type . . . Real Time offset, gain, defective pixel corrections on frame grabber

IMAGE PERFORMANCE

Dynamic Range	> 88 dB
Radiation Energy	40 kV – 16 MV (XRD 1621 AN ES) 20 kV – 16 MV (XRD 1621 CN ES)
Lag	< 8% 1 st frame

ENVIRONMENTAL

Temperature	10 – 35°C (operating), -10 – 50°C (storage)
Humidity	10 – 90% RH (non-condensing)
Vibration	IEC/EN 60068-2-6 (10 – 150 Hz, 0.5 g)
Shock	IEC/EN 60068-2-27 (11 ms, 2 g)

POWER

Supply	XRD EPS Power Supply 215 W
Dissipation	80 W

REGULATORY

Standards	IEC/EN-61010-1, EN 61326-1, EN 60825-1
Regulations	RoHS