

XRD 1611 xP

Industrial Flat Panel Detector

**Superior Image Quality
High Dynamic Range**

XRD 1611 xP is the next generation of Varex Imaging's family of 16-inch (41 cm) amorphous silicon Flat Panel X-ray Detectors.

OVERVIEW

Varex Imaging XRD 1611 xP Flat Panel X-ray Detectors provide a dynamic range of over 84 dB and frame rates up to 15 frames per second. XRD 1611 xP 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 with integrated trigger and X-ray synchronization circuitry. A comprehensive software library for image acquisition and processing is also provided.

Wide energy range, variable frame rates and multiple scintillator options allow the Varex Imaging XRD 1611 xP to meet demanding component requirements of industrial non-destructive testing, as well as life and physical science applications¹.

FEATURES AND BENEFITS

- Greater than 16 million pixels
- 100 μm pixel pitch
- 65,536 grey levels (16-bit ADC)
- Ultra high sensitivity
- Live images @ 15 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 Gd₂O₂S:Tb
 Pixel Matrix 4096 × 4096 @ 100 µm pixel pitch
 Total Area 409.6 × 409.6 mm²

ELECTRONICS

Amplifiers Low noise ASICs with 6 user selectable gain settings
 ADC 16-bit

Read-out Mode	Matrix	Pixel (µm ²)	fps
	4096 × 4096	100 × 100	3.75
	2048 × 2048	200 × 200	7.5
	1024 × 1024	400 × 400	15

MECHANICAL

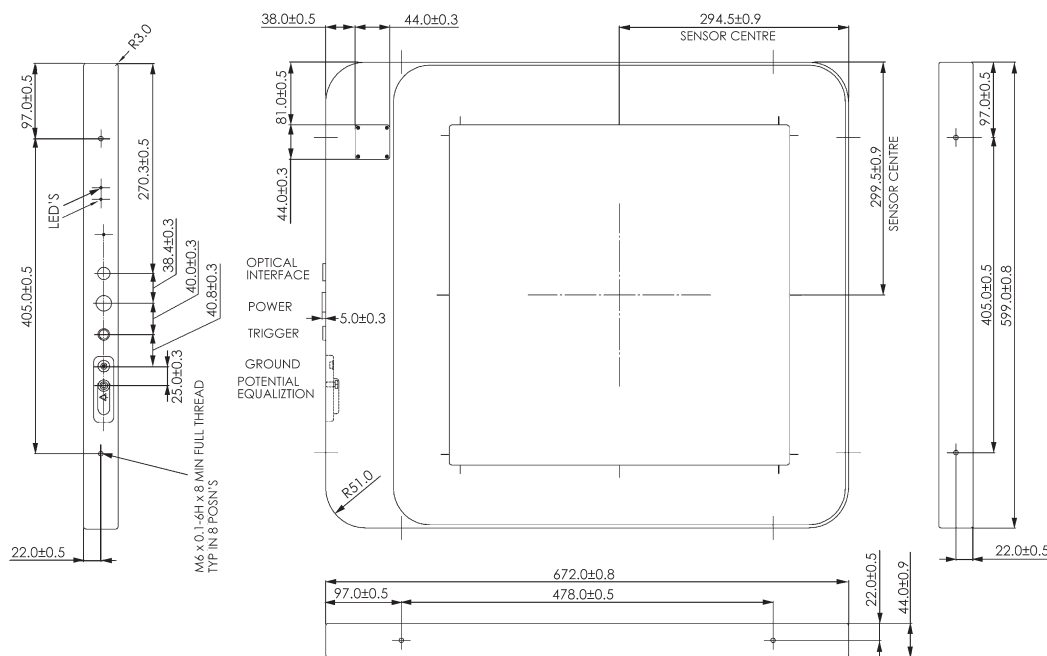
Size 672 mm × 599 mm × 44 mm
 Weight 25 kg
 Housing Aluminum housing with Aluminum (1611 AP) or carbon-fiber (1611 CP) entrance window

COMMUNICATION I/F

Data I/F Fiber-optical to PCIe frame grabber
 X-ray I/F Integrated Trigger control
 Software Support for 32 bit 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 PERFORMANCE

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

IMAGE PERFORMANCE

Dynamic Range > 84 dB
 Radiation Energy 40 kV – 16 MV (XRD 1611 AP)
 20 kV – 16 MV (XRD 1611 CP)
 Lag < 8% 1st frame

ENVIRONMENTAL

Temperature 10 – 35°C (operating), -10 – 50°C (storage)
 Humidity 30 – 70% 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 90W

REGULATORY

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