


XRD 4343CT

Industrial Flat Panel Detector



Superior Image Quality
Large Field of View
High-Speed Real-time Imaging

OVERVIEW

Varex Imaging XRD 4343CT is based on the next generation platform of Varex Imaging's amorphous silicon (a-Si) Flat Panel X-ray Detectors (FPDs). The enhanced performance XRD 4343CT supports a full 43 x 43 cm² (17 x 17 in²) field of view providing superior imaging for low-dose non-destructive testing and cone beam CT applications. The Varex Imaging XRD 4343CT offers 150 μm native pixel resolution and frame rates up to 85 fps. XRD 4343CT supports energy levels up to 225 kV and is available with several scintillator options.

Rapid system integration is accomplished with real-time image processing PCIe board for host computer, integrated trigger and X-ray synchronization circuitry and a comprehensive software library for image acquisition and processing.

FEATURES AND BENEFITS

- 15 fps @ 150 μm, 30 fps @ 300 μm (full FOV)
- 85 fps @ 300 μm (432 mm x 72 mm FOV)
- 150 μm pixel pitch, 2880 x 2880 pixel matrix
- Various binning and FOV options
- 65,536 grey levels (16-bit ADC)
- Ultra high sensitivity
- Selectable gain settings
- Up to 225 kV in microfocus applications
- Fiber optical interface with real-time corrections

APPLICATIONS¹

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

Technical Specifications

SENSOR

Panel	Single substrate amorphous silicon active TFT-diode array
Scintillator	CsI: TI or various Gd ₂ O ₂ S:Tb (Gadox)
Pixel Matrix	2880 × 2880 @ 150 μm pitch
Total Area	432 mm × 432 mm

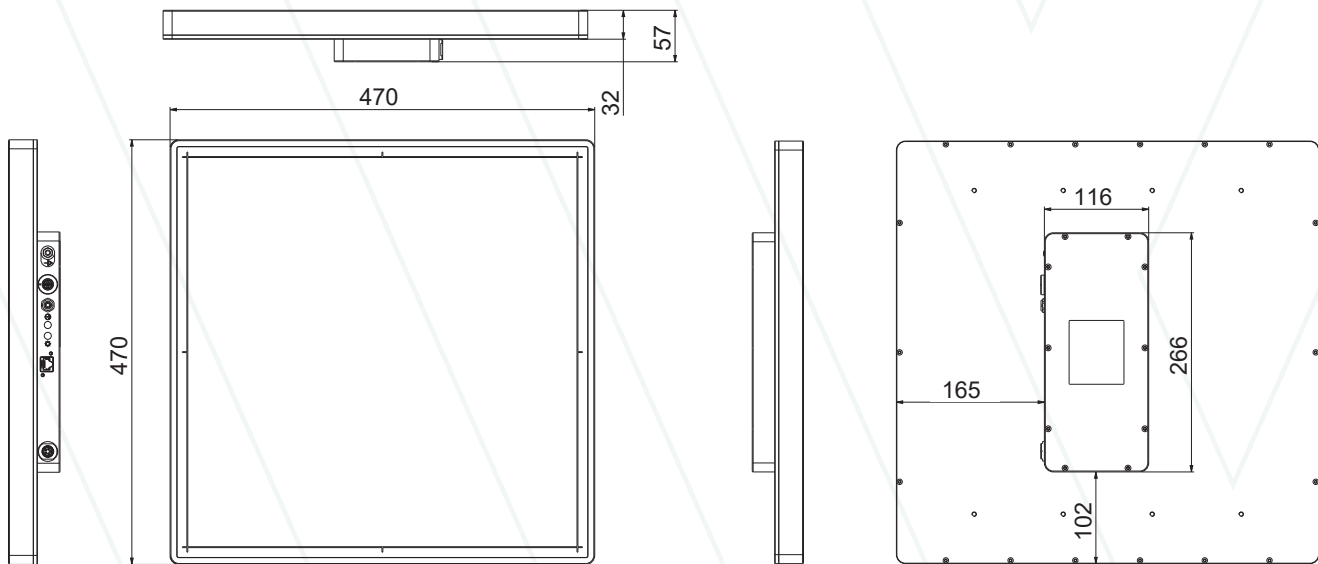
ELECTRONICS

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

Field of View (mm ²)	Pixel Matrix	Binning	Pixel Pitch (μm ²)	(fps)
432 × 432	2880 × 2880	1 × 1	150	15
	1440 × 1440	2 × 2	300	30
	960 × 960	3 × 3	450	45
288 × 288	1920 × 1920	1 × 1	150	20
	960 × 960	2 × 2	300	40
	640 × 640	3 × 3	450	60
216 × 216	1440 × 1440	1 × 1	150	25
	736 × 720	2 × 2	300	50
	480 × 480	3 × 3	450	70
432 × 216	2880 × 1440	1 × 1	150	25
	1440 × 720	2 × 2	300	50
432 × 72	2880 × 480	1 × 1	150	60
	1440 × 240	2 × 2	300	85

MECHANICAL CHARACTERISTICS

(Dimensions in mm)



MECHANICAL

Size	470 mm (w) × 470 mm (l) × 57 mm (h)
Weight	16 kg
Housing	Aluminum with carbon-fiber entrance window

COMMUNICATIONS

Data I/F	Fiber optical to PCIe frame grabber board Class 1 Laser per IEC 60825-1
X-ray I/F	Integrated X-ray trigger control
Software	Support for 32 and 64 bit Windows® OS

IMAGE PROCESSING

Type	Real time pixel corrections on frame grabber
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IMAGING PERFORMANCE

Typical DQE (CsI)	60% (1 cy/mm), 44% (2 cy/mm), 27% (3 cy/mm) for RQA5
Typical MTF (CsI)	63% (1 cy/mm), 34% (2 cy/mm), 18% (3 cy/mm) for RQA5
Energy Range	20 - 225 kV (microfocus) Detector requires additional external shielding
Typical Lag	< 5% 1 st frame
Dynamic Range	82 dB (measured at Gain 5)

ENVIRONMENTAL

Temperature	10 to 35°C (operating), -10 to 55°C (storage)
Humidity	30% to 70% RH (operating, non-condensing)
Vibration	IEC/EN 60721-3 class 2M3 (10-150 Hz, 0.5 g)
Shock	IEC/EN 60721-3 class 2M3 (11 ms, 2 g)

POWER

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

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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