

The 2315 is a high speed, low noise X-ray detector with excellent sensitivity. It employs state-of-the-art large-area CMOS image sensor technology and is supplied with a range of scintillator and interface options.

With switchable pixel gain, the 2315 is designed for both static imaging at high dynamic range, and for real-time imaging with low dose per image.

### Typical application areas

- ▶ small field mammography
- ▶ cone beam CT
- ▶ industrial inspection (NDT)
- ▶ bone densitometry
- ▶ mobile C-arm fluoroscopy

### Product features

- ▶ 75µm pixel pitch
- ▶ 3072 x 1944 pixels
- ▶ high-sensitivity and high-saturation modes
- ▶ binning to 4x4
- ▶ high DQE
- ▶ 14 bit digital output
- ▶ scintillator options: CsI 150µm, CsI 600µm, Gadox
- ▶ BNC input/output for X-ray generator triggering
- ▶ Camera Link or Ethernet data connection

### Image acquisition

<b>Pixel size</b>	74.8µm	MTF at 6 lp/mm <sup>1</sup>	>20%
<b>Sensitive area</b>	229.8 x 145.4 mm	DQE <sup>2</sup>	> 0.7 at 0.5 lp/mm
<b>Resolution</b>	3072 x 1944 pixels	Saturation charge	1.4 Me <sup>-</sup> (high saturation mode) 0.36 Me <sup>-</sup> (high sensitivity mode)
<b>Sensor type</b>	CMOS active pixel sensor	ADC resolution	14 bits
<b>Pixel binning</b>	1x1, 1x2, 1x4, 2x1, 2x2, 2x4 4x1, 4x2, 4x4	Detector dynamic range	typ. 70dB (high saturation mode) typ. 66dB (high sensitivity mode)
		Dark current	8000 e <sup>-</sup> /s (typical at 40C)

### Interfaces

<b>Camera Link option</b>	Camera Link Medium 80MHz (2 cables)
<b>Ethernet option</b>	1000BaseT, GigE Vision
<b>Control channel</b>	115 kBaud serial link carried by Camera Link / Ethernet
<b>Sync in port</b>	3 - 15V, edge or level trigger , BNC
<b>2 x Sync out port</b>	TTL (0 - 3.3V), BNC

### Sustained frame rate (Hz)

	Camera Link	Ethernet
1x1	26	5
1x2	53	11
1x4	72	23
2x1	35	11
2x2	70	23
2x4	81	46
4x1	39	23
4x2	79	46
4x4	86	86

<sup>1</sup> 150µm CsI scintillator

<sup>2</sup> 600µm CsI scintillator, RQA5 (74kVp)

## Programmable features

<b>Switchable pixel gain</b>	Pixel conversion gain is switchable, allowing high-sensitivity or high-saturation operation.
<b>Dynamically configurable binning</b>	Pixel size and aspect ratio can be programmed in the fly, enabling optimised data acquisition for CT.
<b>Standby mode</b>	Power-down of the detector when not imaging, to conserve power and reduce detector temperature
<b>Exposure sensing mode</b>	192 x 144 non-destructive readout pixels, evenly distributed across the imaging area, can be used to measure the exposure during the integration process.
<b>External Trigger modes</b>	<ul style="list-style-type: none"> <li>▶ Edge-trigger mode (X-ray generator triggered by detector)</li> <li>▶ Duration mode (detector triggered by X-ray generator)</li> <li>▶ Software mode (detector triggered by host computer)</li> </ul>
<b>Dark level offset</b>	Sensor offset can be adjusted by software to optimise the dynamic range of the sensor.
<b>Test pattern</b>	An internally generated grey scale image is available for reference.
<b>Exposure time</b>	Can be programmed from 38 ms (at full resolution) to 120 s.
<b>Multi-exposure control</b>	Automatic multiple exposure, for combining images from an object with high density ratio.

## Standards compliance

CE marked. UL & CSA listed.  
 For compatibility with OEM medical systems, the product and its accessories have been certified to standards according to the EU Medical Devices Directive:

- ▶ IEC 60601-1 (Electrical safety)
- ▶ IEC 60601-1-2 (Electromagnetic compatibility) Class A device.

## Accessories

- ▶ power cable: 3m, XLR to FCI D-sub power
- ▶ mains power supply unit 110V – 240V AC
- ▶ EPIX E4 Camera Link board for PC

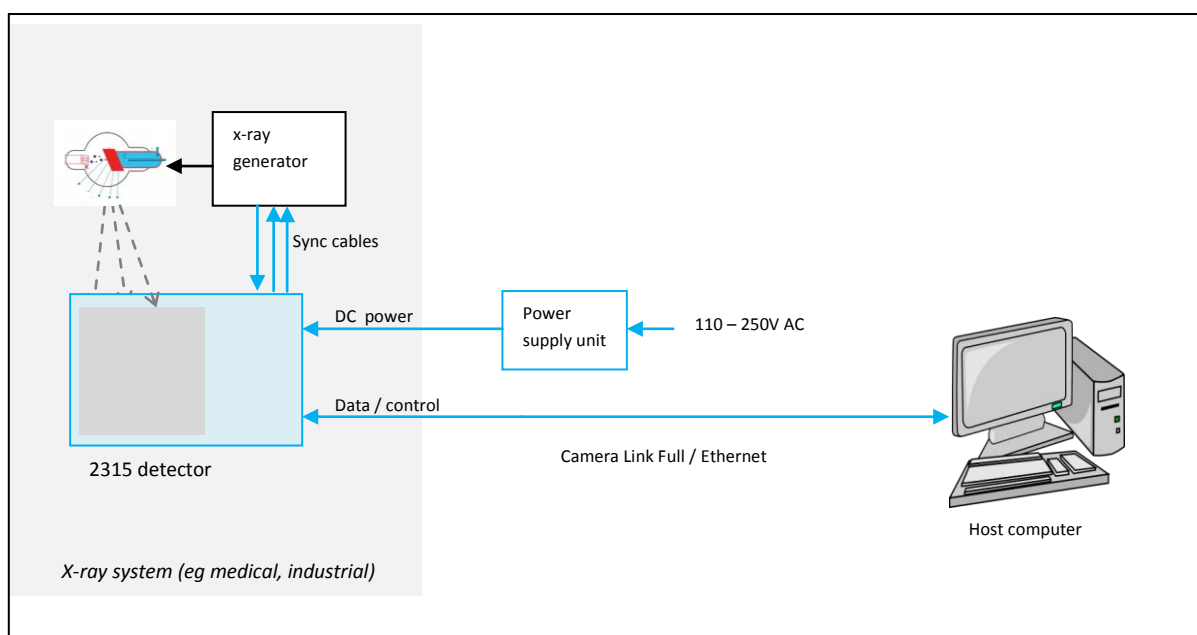
## Scintillator options

- ▶ 150µm thick CsI on amorphous carbon substrate
- ▶ 600µm thick CsI on aluminium substrate
- ▶ Gadox sheet: DRZ Standard, DRZ Plus, or AD Mammo Fine

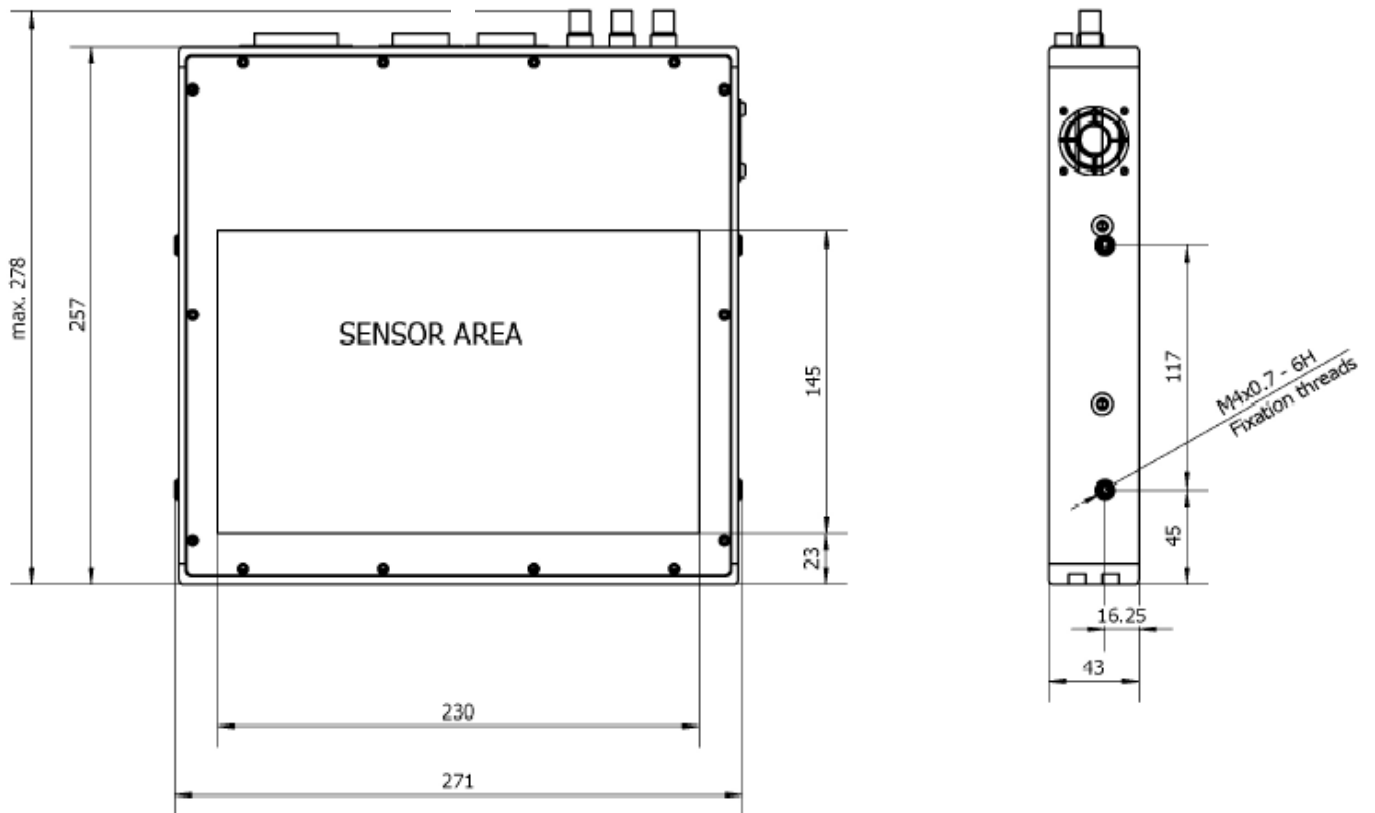
## Temperature range

- ▶ Operating temperature: +10C to +40C
- ▶ Storage temperature: -10C to +50C

## Connections



## Case dimensions



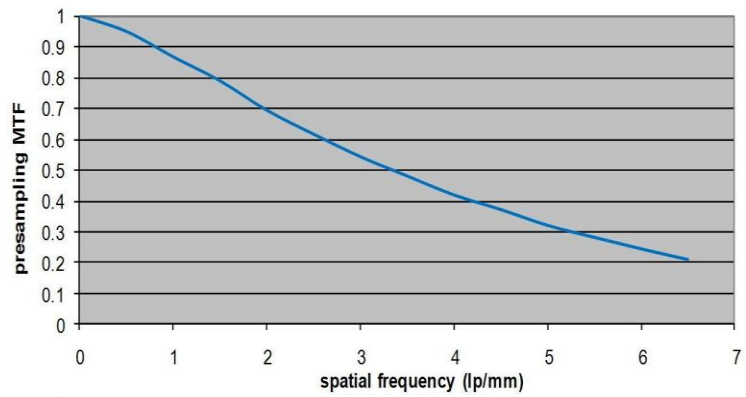
Connector panel designation is dependent on data link option (Camera Link or Ethernet).

Mounting: use the two M4 threaded inserts on each side of the enclosure, shown dimensioned.

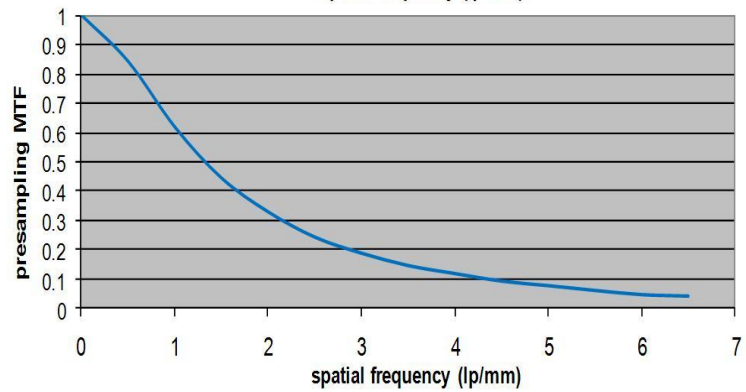
Weight: 3.5 kg

## Resolution

150um Csl



600um Csl



## DC supply requirements

Voltage inputs and currents	1: +4.0 to +4.5V 2.5A 2: +6.0 to +7.5V 1.6A 3: -6.0 to -7.5V 0.6A
Connector type	D-sub power (FCI) 5-way
Ripple/noise input	Max 1% peak over 0-20MHz
Power-down current	Input 1: < 150mA Inputs 2,3: <1mA
Power dissipation (active)	26W max

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