

## 2121HS CMOS X-ray Detector



The 2121HS is a dynamic X-ray detector designed for industrial NDT, pre-clinical and clinical applications, with a pixel pitch of 100  $\mu\text{m}$  and a choice of high-efficiency CsI or Gadox scintillator. It is ideal for CBCT or fluoroscopy.

Innovative sensor design enables a frame rate of 70 fps in full resolution, 84 fps binned  $2 \times 2$  and higher speeds for a region of interest. The flexible region of interest function allows a region to be configured to optimise the frame rate, for example  $2049 \times 1600$  pixels can be read at 100 fps.

This detector employs a state-of-the-art CMOS sensor with 14-bit digital outputs and two gain modes offering a high dynamic range mode or a high sensitivity mode ideal for low dose, real-time imaging. The sensor is permanently bonded to a fibre optic plate (FOP) to enhance image quality and make the device more radiation tolerant. The detector houses a conventional or a radiation hardened FOP and contains lead shielding to provide protection against radiation damage.

For developers, an SDK is available with DLLs for 64-bit Windows and Linux. These include C++ and .NET wrappers for easy integration with customised software. Library functions include dark subtraction, gain correction and defect correction. Example code is provided, including a simple Graphical User Interface. The SDK supports Camera Link, 5 GigE and USB 3.0 communications.

### Key Features

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**Fast, low noise imaging with minimal image lag**

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**CMOS sensor bonded to fibre optic plate (FOP)**

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**High Sensitivity and High Dynamic Range modes**

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**High speed, flexible region of interest**

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**Choice of high resolution / high sensitivity CsI scintillator**

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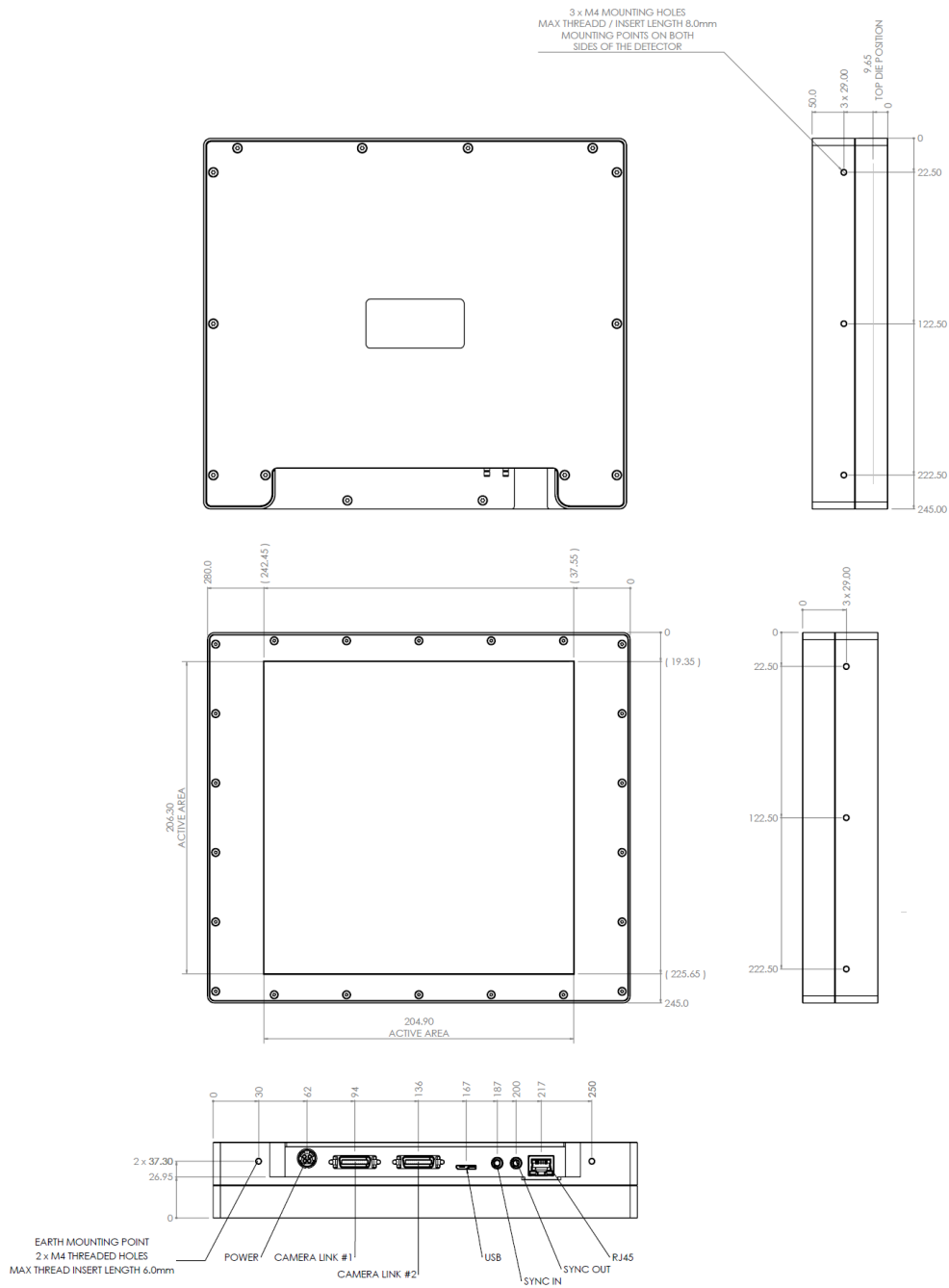
**Windows and Linux SDK available for rapid design-in**

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## Technical Specifications

<b>SENSOR</b>	
Pixel Size	100 $\mu$ m
Sensitive Area	204.9 $\times$ 206.3 mm <sup>2</sup>
Pixel Matrix	2049 $\times$ 2063
<b>MAX FRAME RATE</b>	
Frame Rate Full Resolution	70 fps
Frame Rate Binned 2 $\times$ 2	84 fps
<b>IMAGE PERFORMANCE</b>	
Dynamic Range - High Sensitivity Mode	72
Dynamic Range - High Dynamic Range Mode	74
Bit Depth	14-bit
Max Energy	225 kV
<b>SCINTILLATOR, WINDOW &amp; FOP OPTIONS</b>	
Scintillator	High Efficiency CsI
	High Resolution CsI
	Various Gadox Screens
X-ray Window Material	Carbon Fibre
FOP	2 to 5 mm
<b>MECHANICAL</b>	
Weight (3 mm FOP)	8.2 kg
Dimensions	245.0 $\times$ 280.0 $\times$ 50.0 mm <sup>3</sup>
<b>COMMUNICATIONS</b>	
Camera Link	Full @ 75 Mpixel/s
GigE	5 GigE
USB	High Speed USB 3.0
Trigger Mode	Continuous, SW, External Trigger
Software Support	64-bit Windows® OS from Windows 10
<b>POWER</b>	
Power Supply	12 V
Max Dissipation	19 W
<b>TEMPERATURE RANGE</b>	
Operating Range	+5 °C to +40 °C
Storage Range	-20 °C to +55 °C

# SpectrumLogic



Unless otherwise specified, Spectrum Logic 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.

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