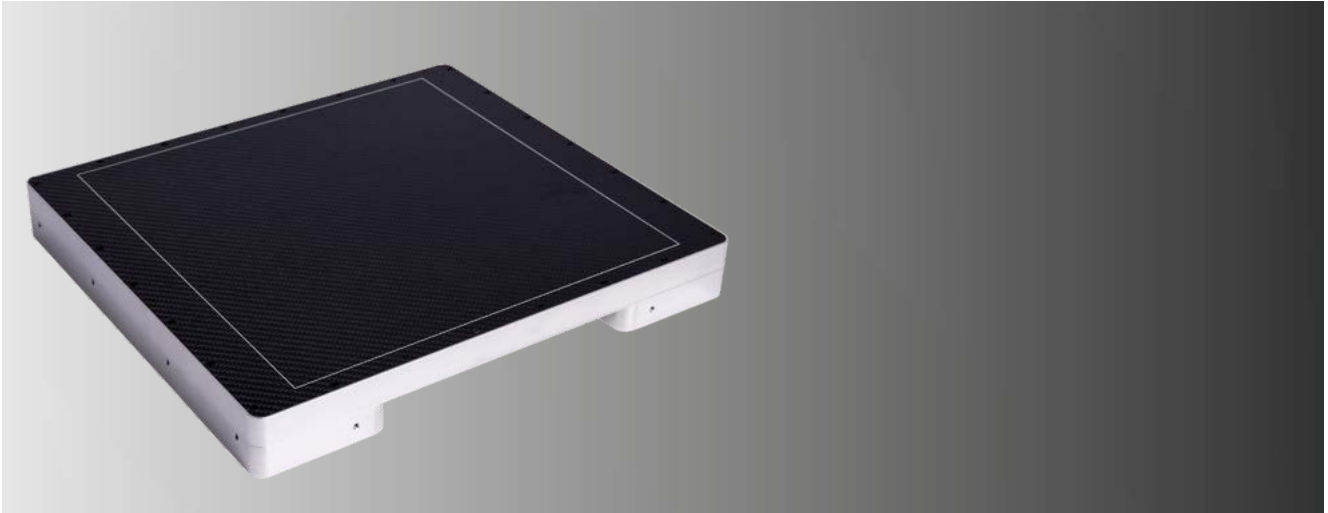# SpectrumLogic

3131HS
CMOS X-ray Detector

The 3131HS is a high speed dynamic X-ray detector designed for low dose clinical applications, with a pixel pitch of 100 μm and a choice of high-efficiency or high resolution CsI scintillator or Gadox. It is ideal for CBCT or fluoroscopy.

Innovative sensor design enables a full frame rate of up to 84 fps and higher speeds in region of interest modes. The flexible region of interest function allows a region to be configured to optimise the frame rate, for example 1500 × 2000 pixels can be read at 160 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 array is bonded to a fibre optic plate (FOP) to enhance image quality and make the device more radiation tolerant.

For developers, a windows-based SDK is available with DLLs for Windows x64. These include C libraries and C++/.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, 10 GigE and USB 3.0 communications.

Key Features

High frame rate

CMOS sensor bonded to fibre optic plate (FOP)

High Sensitivity and High Dynamic Range modes
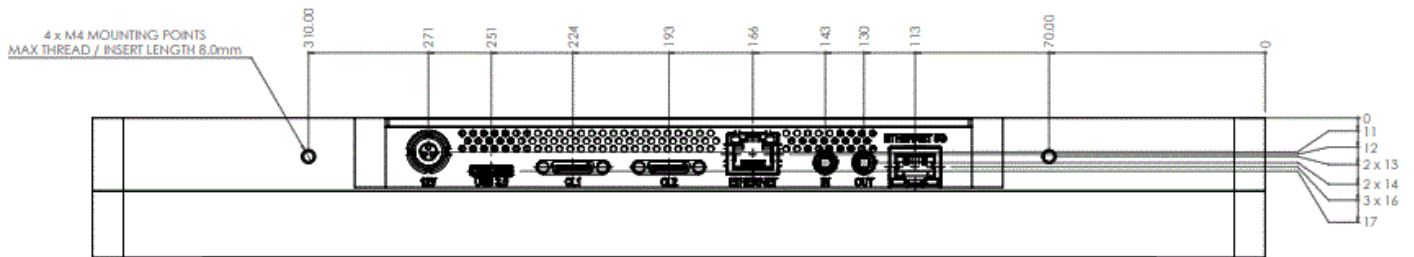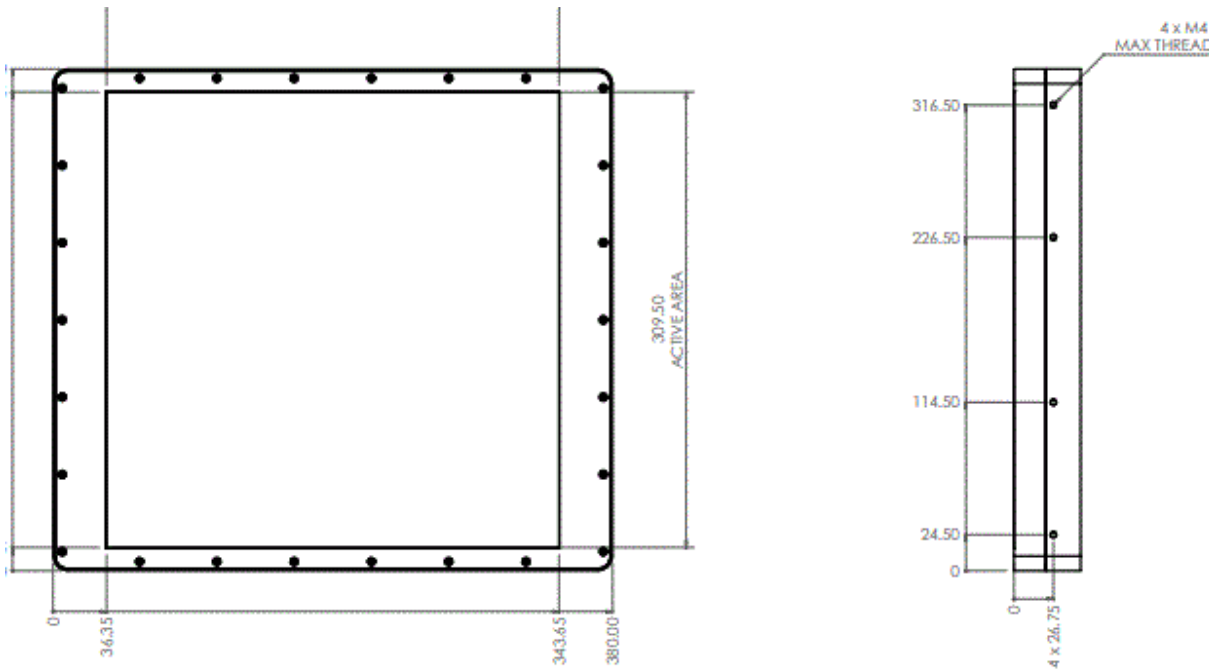
High speed, flexible region of interest

Choice of high resolution / high sensitivity CsI scintillator

Spectrum Logic provides a Windows SDK for rapid design-in

SpectrumLogic

Technical Specifications

SENSOR	
Pixel Size	100 μm
Sensitive Area	309.5 × 307.3 mm^2
Pixel Matrix	3095 x 3073
MAX FRAME RATE	
Frame Rate Full Resolution	62 fps
Frame Rate Binned 2 × 2	84 fps
Full Read Time Full Resolution	12 ms
IMAGE PERFORMANCE	
Dynamic Range - High Sensitivity Mode	72
Dynamic Range - High Dynamic Range Mode	76
Bit Depth	14-bit
Max Energy	12 to 160 kV
SCINTILLATOR, WINDOW & FOP OPTIONS	
Scintillator	High Efficiency CsI
	High Resolution CsI
	Various Gadox Screens
X-ray Window Material	Carbon Fibre
FOP	Optional
MECHANICAL	
Weight (3 mm FOP)	16 kg
Dimensions	341 × 380 ×45 mm^2
COMMUNICATIONS	
Camera Link	Full @ 85 MHz
GigE	10 GigE
USB	High Speed USB 3.0
Trigger Mode	Continuous, SW or Pulsed Input
Software Support	64-bit Windows® OS from Windows 7
POWER	
Power Supply	12 V
Max Dissipation	24 W
TEMPERATURE RANGE	
Operating Range	+5 °C to +40 °C
Storage Range	-20 °C to +55 °C

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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