

3131HS

CMOS X-ray Detector



The 3131HS is a high speed dynamic X-ray detector designed for industrial 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 and AXI.

Innovative sensor design enables a full frame rate of up to 60 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 \times 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, an SDK is available with DLLs for 64-bit Windows and Linux. 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, GigE and USB communications.

Key Features

Fast, low noise imaging with minimal image lag

CMOS sensor bonded to fibre optic plate (FOP)

High Sensitivity and High Dynamic Range modes

High speed, flexible region of interest

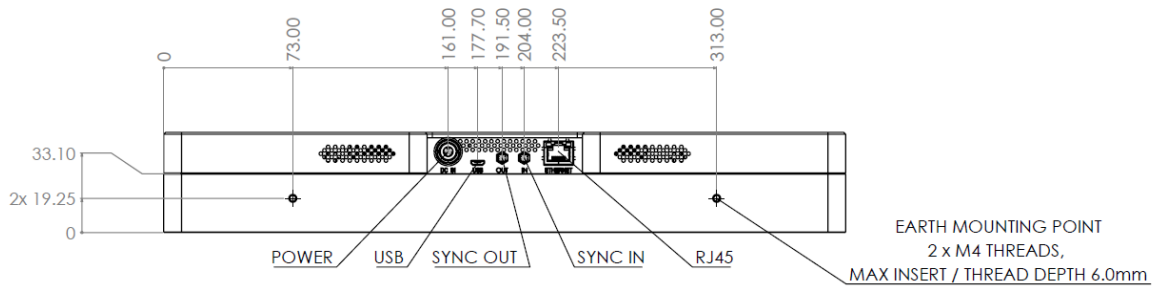
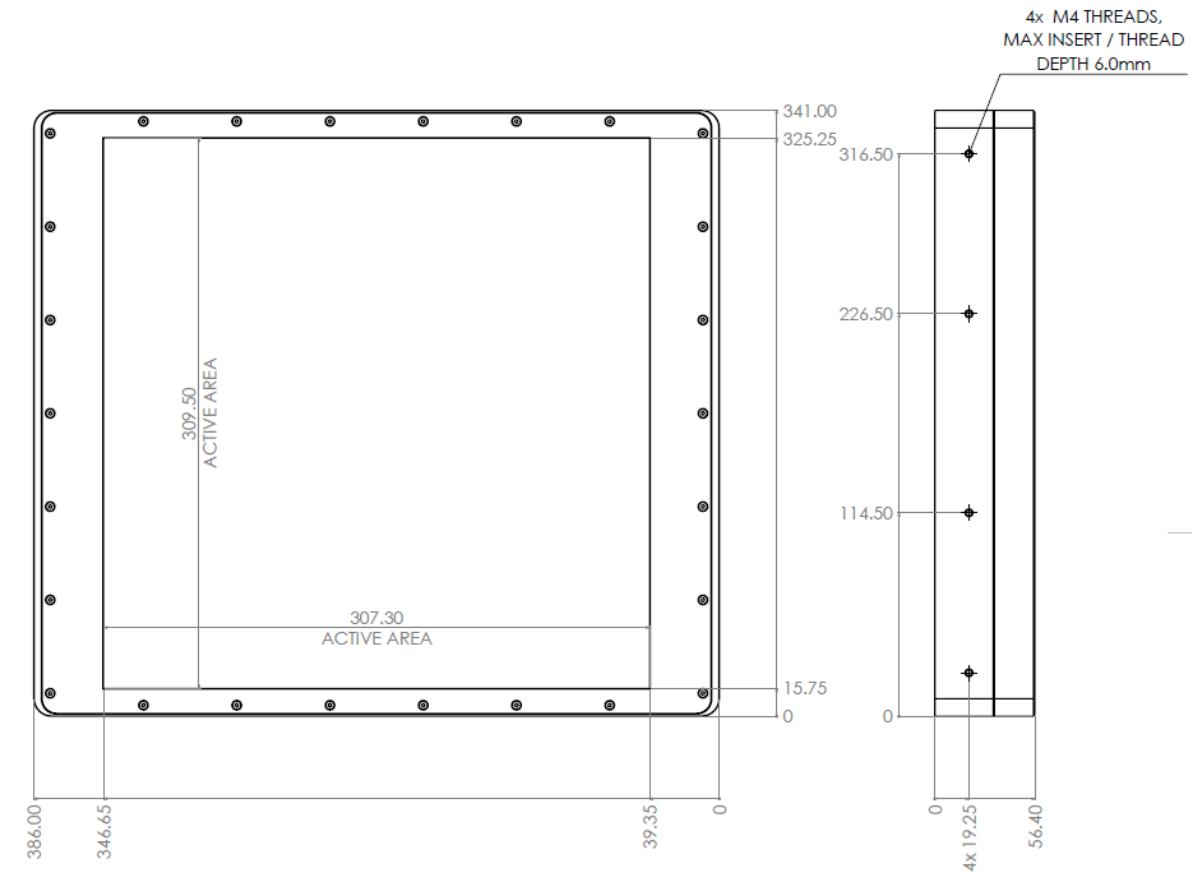
Choice of high resolution / high sensitivity CsI scintillator

Windows and Linux SDK available for rapid design-in

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
IMAGE PERFORMANCE	
Dynamic Range - High Sensitivity Mode	72
Dynamic Range - High Dynamic Range Mode	76
Bit Depth	14-bit
Max Energy	225 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)	22 kg
Dimensions	341 × 386 × 56.4 mm ³
COMMUNICATIONS	
GigE	10 GigE
Trigger Mode	Continuous, SW or Pulsed Input
Software Support	64-bit Windows® and Linux
POWER	
Power Supply	24 V
Max Dissipation	24 W
TEMPERATURE RANGE	
Operating Range	+5 °C to +40 °C
Storage Range	-20 °C to +55 °C

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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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