

1206HR CMOS X-ray Detector



The 1206HR is a high-resolution dynamic X-ray detector designed specifically for pre-clinical, scientific and industrial applications, with a pixel pitch of 50 μm and high-resolution CsI or Gadox scintillator.

This detector employs a state-of-the-art CMOS sensor with 14-bit digital outputs and two gain modes offering a high dynamic 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 is housed in a low-profile enclosure incorporating lead shielding.

Innovative sensor design enables a frame rate of up to 59 fps can be achieved with Camera Link or 5 GigE. A programmable region of Interest (ROI) gives higher frame rates, for example with an ROI of 2392×400 pixels can be read out at 176 frames per second.

For developers, a windows-based SDK is available with DLLs for Windows x64. 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

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

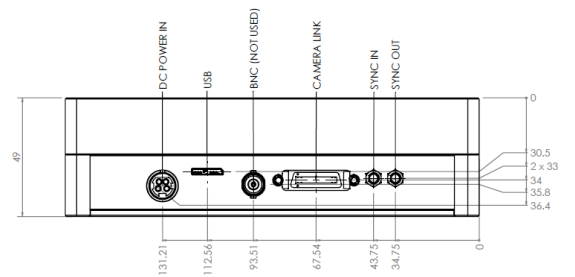
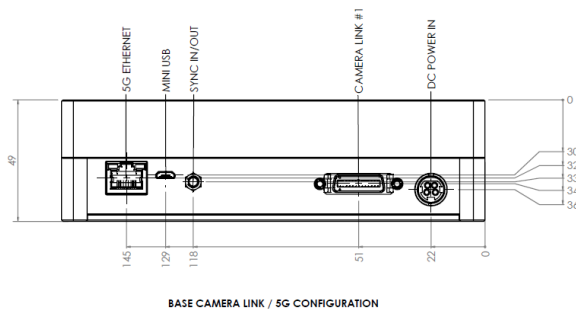
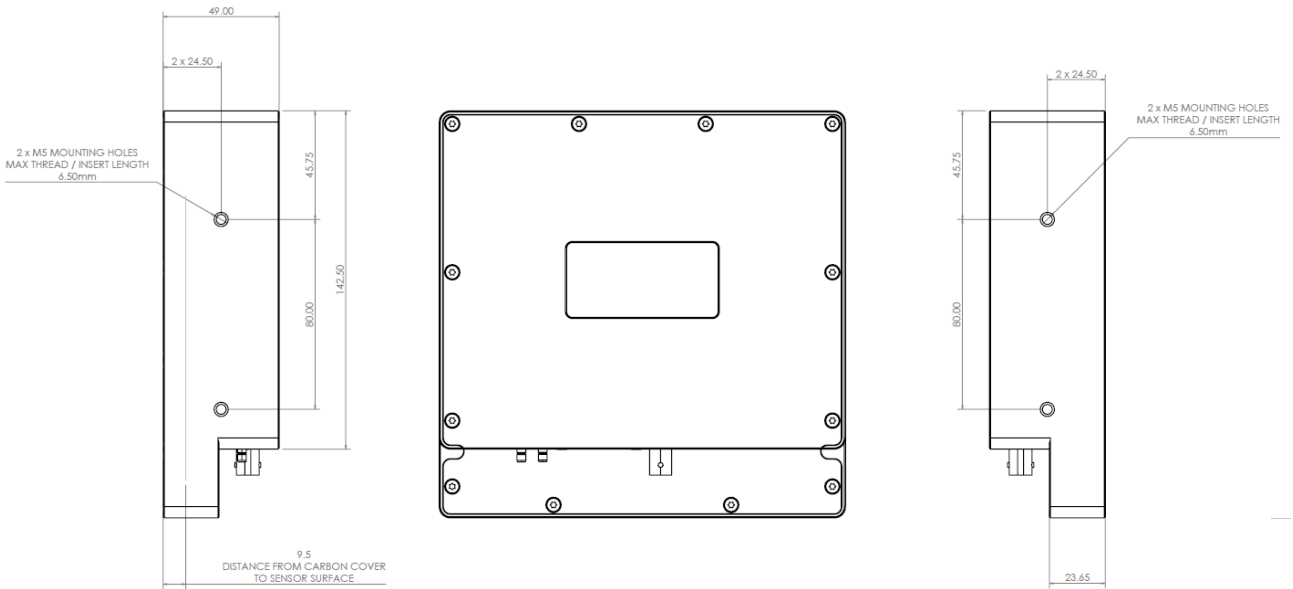
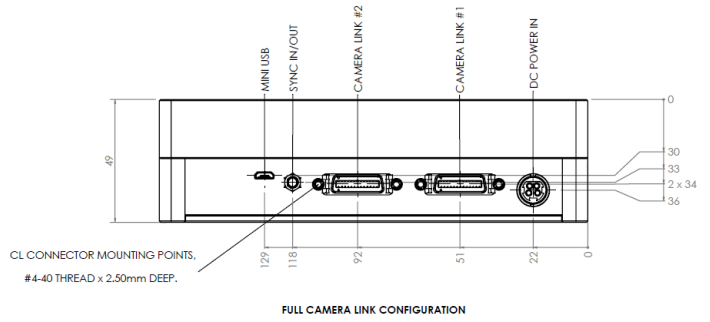
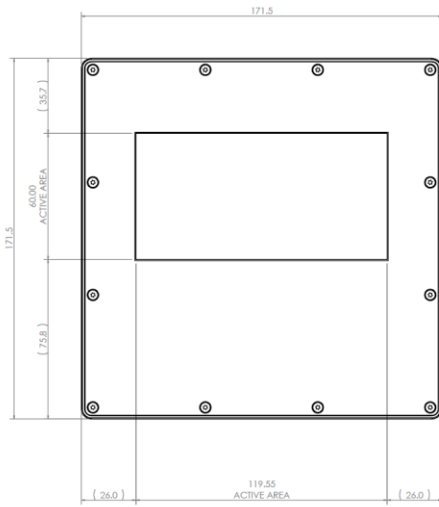
Choice of high resolution / high sensitivity CsI scintillator

Spectrum Logic provides a Windows SDK for rapid design-in

Technical Specifications

| SENSOR | |
|---|--|
| Pixel Size | 50 μm |
| Sensitive Area | 119.6 \times 60.0 mm ² |
| Pixel Matrix | 2392 \times 1200 |
| MAX FRAME RATE | |
| Frame Rate Full Resolution | 59 fps |
| IMAGE PERFORMANCE | |
| Dynamic Range - High Sensitivity Mode | 70 |
| Dynamic Range - High Dynamic Range Mode | 74 |
| Bit Depth | 14-bit |
| Max Energy | 225 kV |
| SCINTILLATOR, WINDOW & FOP OPTIONS | |
| Scintillator | High Efficiency Csl |
| | High Resolution Csl |
| | Various Gadox Screens |
| X-ray Window Material | Carbon Fibre |
| FOP | 2 to 5 mm |
| MECHANICAL | |
| Weight (3 mm FOP) | 2.9 kg |
| Dimensions | 117.5 \times 117.5 \times 49.0 mm ³ |
| COMMUNICATIONS | |
| Camera Link | Base @ 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 |
| POWER | |
| Power Supply | 24 V |
| Max Dissipation | 6 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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