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0606HR
CMOS X-ray Detector

The 0606HR is a dynamic X-ray detector designed for industrial NDT, electronics inspection and pre-clinical applications, with a pixel pitch of 50 µm and a choice of high-resolution CsI or Gadox scintillator. It is ideal for CBCT and real-time inspection.

Innovative sensor design enables a frame rate of up to 59 fps with USB 3.0 and 40 fps with the GigE interface. The flexible region of interest function allows a region to be configured to optimise the frame rate.

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 housing 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, gain and defect corrections. 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)

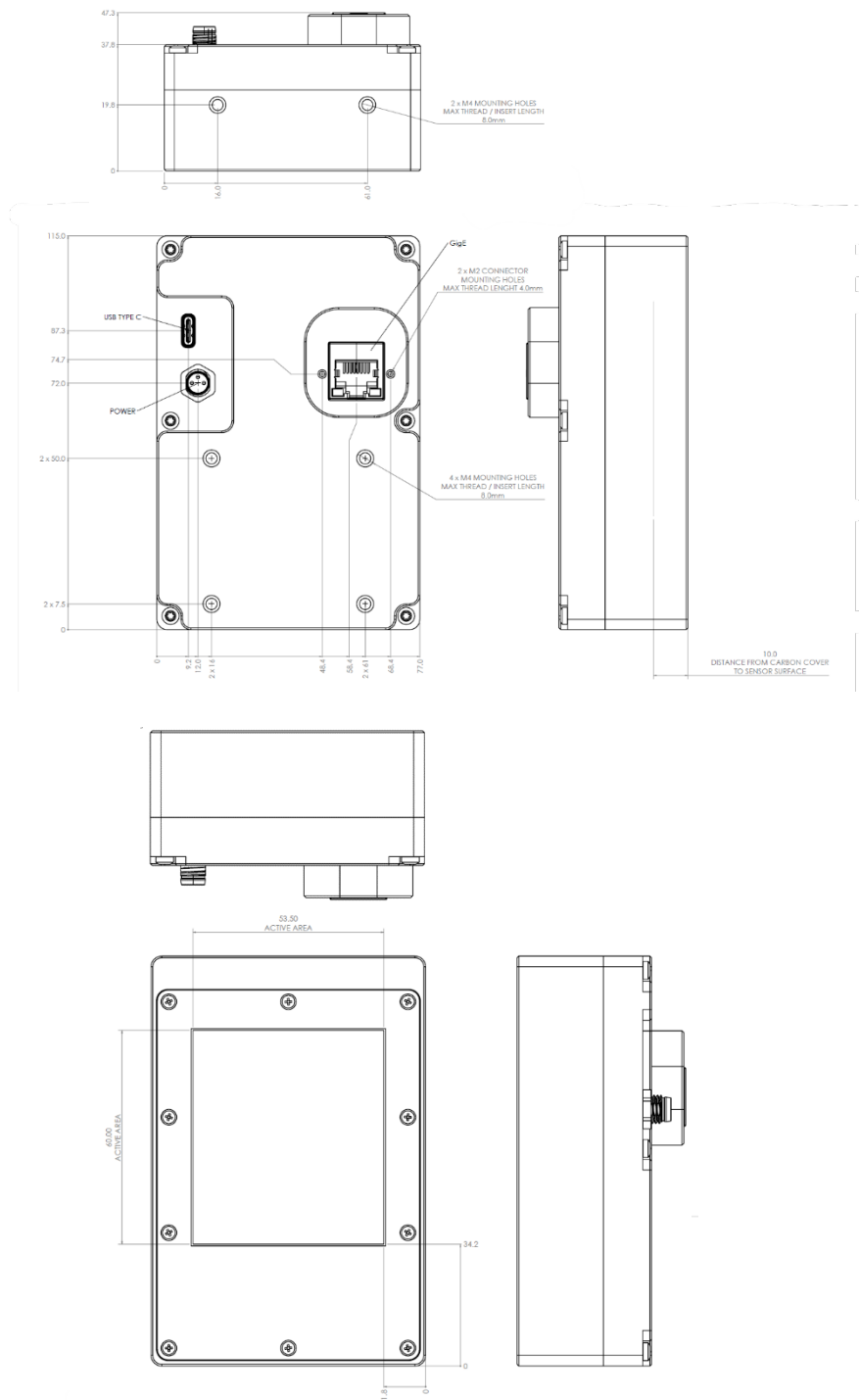**High Sensitivity and High Dynamic Range modes**

High speed, flexible region of interest

Windows and Linux SDK available for rapid design-in

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Technical Specifications

SENSOR	
Pixel Size	50 μm
Sensitive Area	60.0×53.5 mm^2
Pixel Matrix	1200×1072
MAX FRAME RATE	
Frame Rate Full Resolution	59 fps (USB) 40 fps (GigE)
Frame Rate Binned 2×2	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 Resolution CsI
	Various GadOx Screens
X-ray Window Material	Carbon Fibre
FOP	2 to 5 mm
MECHANICAL	
Weight (3 mm FOP)	1 kg
Dimensions	$115.0 \times 77.0 \times 37.8$ mm^3
COMMUNICATIONS	
GigE	1 GigE
USB	High Speed USB 3.0
Trigger Mode	Continuous, SW
Software Support	64-bit Windows® and Linux
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

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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