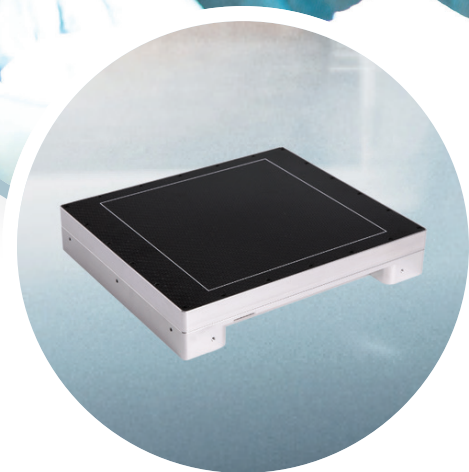


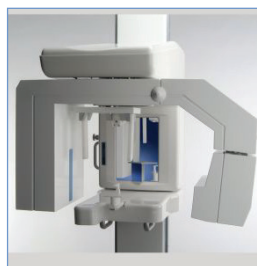
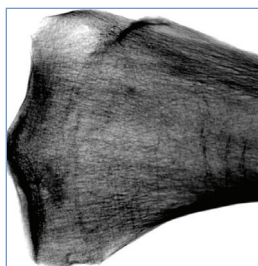
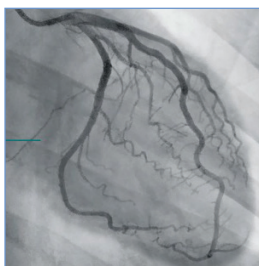


SpectrumLogic

INNOVATION IN IMAGING



CMOS X-Ray Detectors For Medical Imaging



Applications

Spectrum Logic offers a complete portfolio of CMOS flat X-ray detectors tailored specifically to meet the demanding needs of dynamic diagnostic and interventional medical applications.

- ✓ General Surgery
- ✓ Cardiology
- ✓ Vascular procedures
- ✓ Gastro-intestinal Fluoroscopy
- ✓ Traumatology
- ✓ Orthopedics
- ✓ Urology



Mobile Surgery



Mini C-arm



Pre-Clinical



Surgical Specimen



Dental

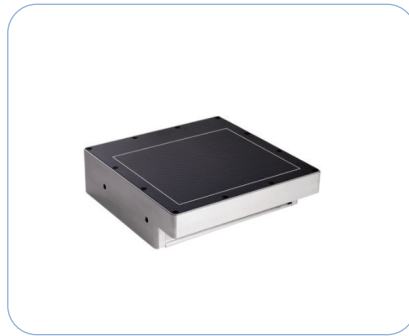
Key Features

- ✓ Broad product portfolio: active area from $60 \times 54 \text{ mm}^2$ to $310 \times 307 \text{ mm}^2$, 50 and 100 μm pixel pitch
- ✓ Fibre Optic Plate (FOP) – protects the sensor from radiation damage and reduces noise
- ✓ Excellent low dose performance
- ✓ Fastest frame rates in 50 μm and 100 μm detectors
- ✓ Lower noise than a-Si or IGZO
- ✓ Dual gain modes
- ✓ ROI modes with high frame rates
- ✓ Customisation of scintillator is available to optimise the performance for the customer's application
- ✓ No measurable image lag from CMOS sensor
- ✓ 5 GigE and 10 GigE available
- ✓ Windows SDK provided for rapid design-in

Medical Detectors



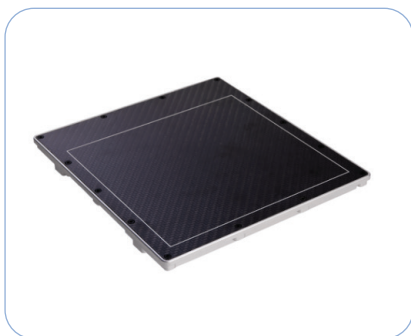
0606HR



1412HR



2824HR



1615HS



2121HS



3131HS

Advantages of CMOS X-ray detectors



HIGH SPEED IMAGING

Due to the high electron mobility of crystalline silicon and our high-speed electronics, Spectrum Logic CMOS detectors achieve high frame rate over the full active area and at full resolution, reaching frame rates of >100 fps. Higher frame rates are possible in ROI modes. Our detectors are free of image lag generated in the sensor and electronics although scintillators do have some afterglow.



HIGH IMAGE QUALITY

CMOS FPDs have a higher readout speed and lower noise than a-Si and IGZO due to the much higher electrical charge mobility in crystalline silicon and the CMOS active pixel sensor (APS) architecture. Due to the low noise level of CMOS, the low dose Detective Quantum Efficiency (DQE) is significantly improved, and X-ray detection is achieved even at very low dose levels.



HIGH RESOLUTION

Spectrum Logic's proprietary active pixel sensor designs ensure low read noise and excellent image quality even at low signal levels.



LIFETIME DURABILITY

Our CMOS detector design has built-in radiation hardness both in the active pixel design and by virtue of the use of FOPs, which shield and protect the sensors and electronics. This design significantly improves the product reliability and enables a long operating life.



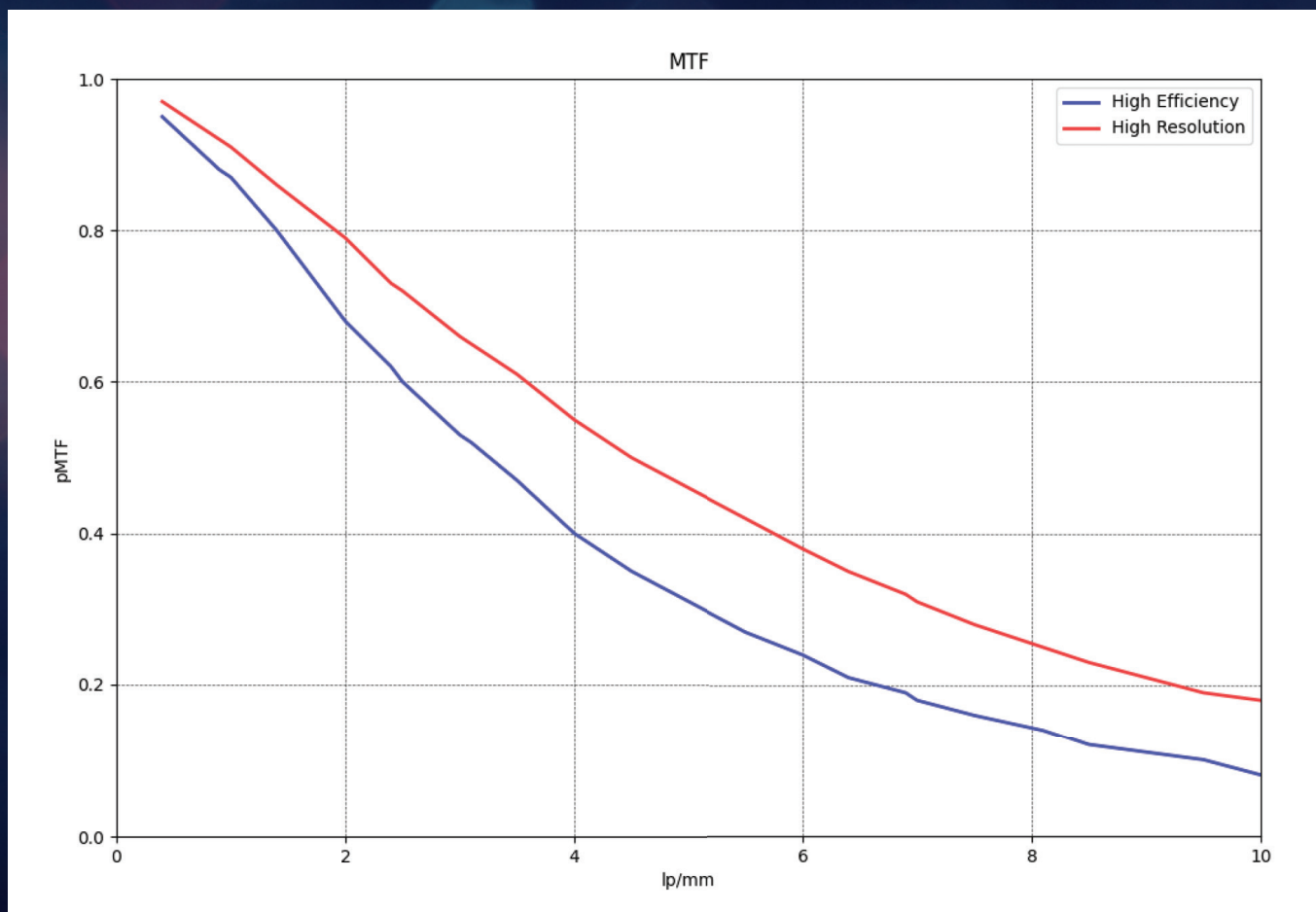
INNOVATIVE DESIGN

Our sensors have radiation hard pixel design, with adjustable saturation dose, allowing the sensor to be used for high or low radiation levels, making our detectors suitable for a wide range of medical applications.

Spectrum Logic X-ray Detectors:

- ✓ 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
- ✓ Standard Data Interface
- ✓ Spectrum Logic provides a Windows SDK for rapid design-in

Comparison of two types of scintillator



Product Families

HS Family: Mobile Surgery, Mini C-arm, Dental and Veterinary

High Sensitivity - 100 μm Pixel Pitch

						
	3131HS	2824HS	2121HS	1615HS	1510HS	1412HS
Active area (mm)	309.5 x 307.3	280 x 240	205 x 205	161 x 150	153.6 x 103.1	140.1 x 120
Image Resolution	3095 x 3073	2803 x 2401	2063 x 2048	1610 x 1500	1536 x 1030	1401 x 1200
Frame Rate (fps) 1x1	60	45 (CL) 90 (10GigE)	84	83	66	100
Dimensions (mm)	341 x 380 x 45	315 x 316 x 53	245 x 280 x 47	201 x 187 x 35	229 x 107 x 10	171 x 171 x 49
ROI mode	✓	✓	✓	✓	✓	✓
Interface	10GigE	10GigE, CL	10GigE	10GigE	USB	10GigE

Product Families

HR Family: Surgical Specimen and Pathology

High Resolution with 50 μm CMOS sensors

				
	2824HR	1412HR	1206HR	0606HR
Active area (mm)	280 x 240	140 x 120	120 x 60	60 x 53.5
Image Resolution	5606 x 4802	2802 x 2400	2392 x 1200	1200 x 1072
Frame Rate (fps)	12(CL) 22(10GigE)	29	59	60 (USB)
Dimensions (mm)	315 x 316 x 53	171 x 171 x 49	171 x 171 x 49	108 x 77 x 35
ROI mode	✓	✓	✓	✓
Interface	CL, 10GigE	CL, 10GigE	CL, 10GigE	GigE, USB

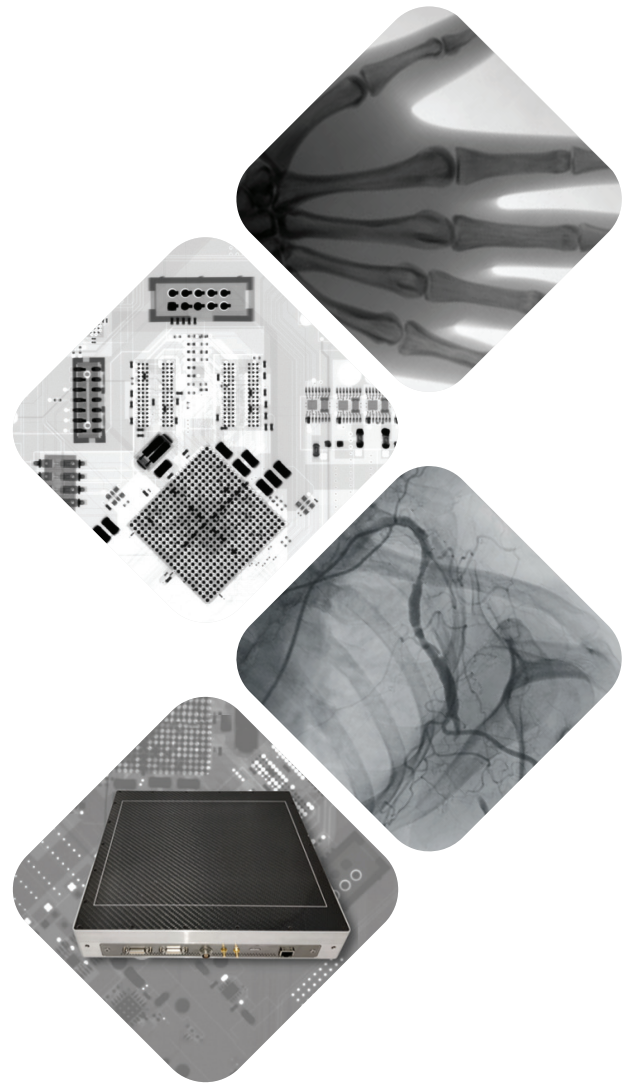
Unless otherwise specified, Spectrum Logic X-ray Detectors are components intended to be integrated into products by X-ray system manufacturers. System manufacturers are responsible for qualifying and validating their products for their intended uses and meeting all applicable regulatory requirements. Contents in this document are subject to change without notice

Spectrum Logic is a London based innovator and manufacturer of detection and imaging products using CMOS image sensors. Spectrum Logic is part of the ISDI group.

ISDI is a leader in the design and manufacture of very large area CMOS image sensors for X-ray applications. It has IP and expertise related to all aspects of CMOS X-ray detectors.

Global provider of Design, Engineering and Manufacturing

- ✓ Image Sensor Product Solutions
- ✓ Medical/Dental X-Ray
- ✓ Non-Destructive Testing
- ✓ Industrial & Scientific X-Ray
- ✓ Design, Development and Manufacturing
- ✓ Customer Applications Support



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