Condor 486:200

The Condor™-486:200 is an ultra-sensitive, fiber-optic taper coupled camera for use in X-ray imaging applications that demand a large field of view. The camera is based upon a state-of-the-art, scientific grade, 4K x 4K sensor. At more than 60 x 60 mm^2, the 486 is the largest commercially available CCD in the world. It is bonded to a 200-mm fiber-optic, the largest commercially available taper in the world. This combination delivers unsurpassed optical throughput and field of view. The camera boasts a low-noise, dual-speed, four-port readout architecture for the ultimate in sensitivity and speed. Dark current is virtually eliminated with cryogenic cooling to –60°C. Hard metal seals assure a reliable vacuum and continuous maintenance-free operation. Linear, 16-bit dynamic range and sophisticated features such as anti-blooming control and software control over binning and gain make the Condor™ the ultimate instrument for scientific X-ray imaging. The camera comes standard with a beryllium window for transmitting X-rays while blocking visible light. A range of X-ray phosphors can be selected for your particular application.

Features	Benefits
4k x 4k sensor	High resolution (16 Megapixel)
60 mm x 60 mm CCD image area	Large CCD allows small taper ratio
200-mm fiber-optic taper	Largest field of view
2.21:1 taper ratio	High optical throughput
Four-port readout	Optimal design for speed and sensitivity
Cryogenic cooling	Minimize dark noise
High-performance low-noise electronics	Minimize readout noise
Linear 16-bit dynamic range	Scientific precision and accuracy
Software-controlled binning & windowing	Optimize speed versus resolution
Plug-in for ImagePro Plus software	Data acquisitoin and analysis

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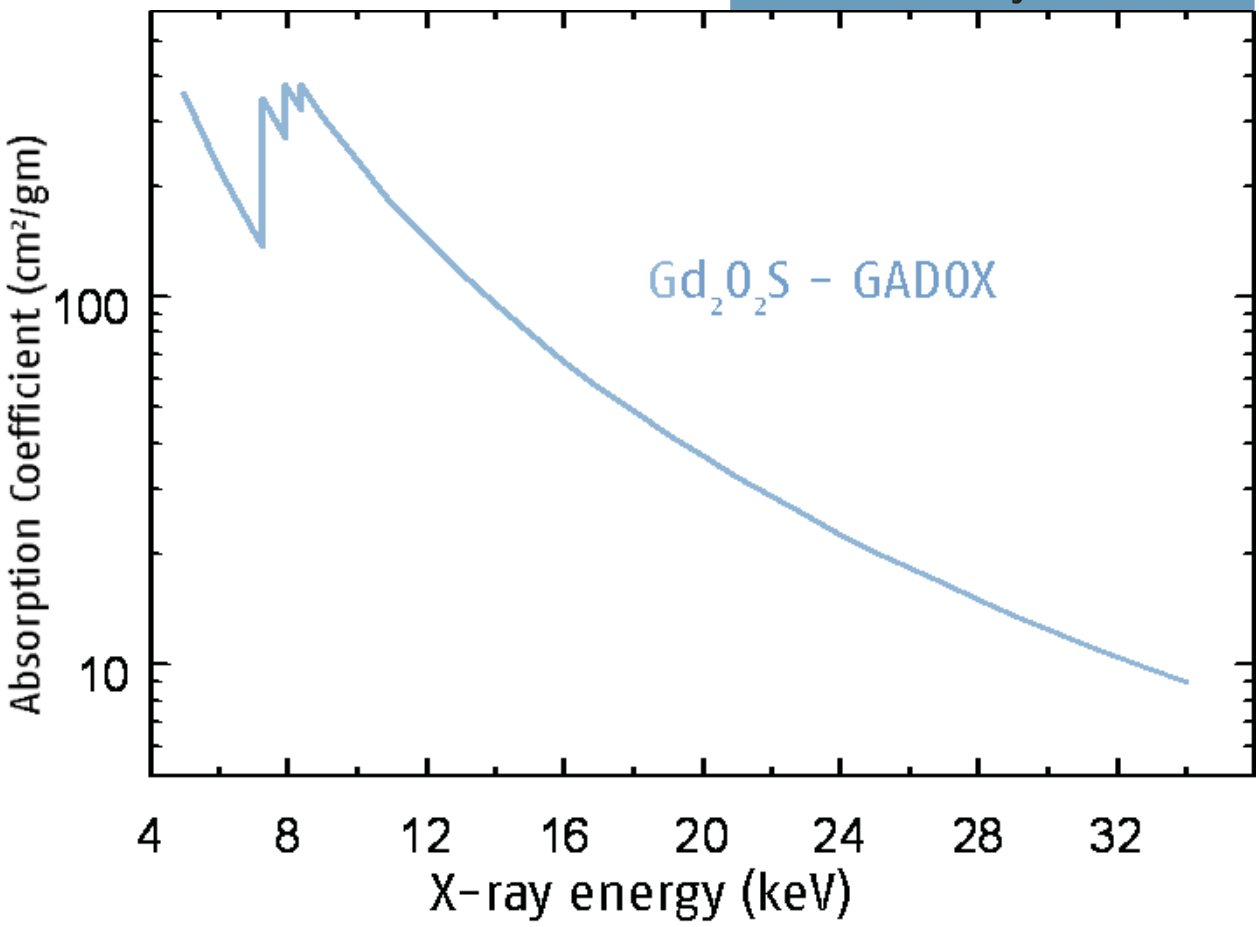
Specifications

Sensor			
Type	16MP CCD, scientific grade 1, front-illuminated		
Resolution	4096 x 4096 pixels		
Pixel Size	15 µm x 15 µm (33 µm x 33 µm effective)		
Image Area	135.1 mm x 135.1 mm		
Fiber Optic	2.2:1 fiber-optic taper (135 mm diameter)		
Phosphor	Gadolinium Oxysulfide (Gd_2O_2S) – Custom phosphors available		
	Minimum	Typical	Maximum
Read Noise			
1 MHz		10 e-	12 e-
250 kHz		5 e-	7 e-
Full Well Capacity			
Single Pixel	80 ke-	100 ke-	
Output Register	700 ke-	800 ke-	
Gain		1.5 e-/ADU (nominal)	
Linearity		< 1%	
Dark Current (-60 °C)		0.005 e-/pix/sec	0.01 e-/pix/sec
Cooling	-60°C, Thermoelectric w/cryo cooler		
Output Ports	4 low noise amplifiers		
Readout Rate			
4 MHz	4 ports x 1 MHz		
1 MHz	4 ports x 250 kHz		
Binning and Windowing	1x1, 2x2, 4x4 and 8x8; Arbitrary sized centered window		
ADC Dynamic Range	16-bit		
Vertical Shift Speed	200 µsec		
Operating Range	15°C to 30°C; 40% to 75% relative humidity (non-condensing)		
PC Interface	USB 2.0		
I/O Triggers	External In, Expose Out, Shutter Out		
Camera Weight	65 pounds (29.5 kg)		

*Note: All Specifications measured in 1x1 (full image) mode unless stated otherwise. Subject to change without notice.

Sensitivity Curve



Readout Rates

	1 x 1 – 4MHz	2 x 2 – 2.5 MHz	4 x 4 – 2.1 MHz	8 x 8 – 1.6 MHz
Readout Time	6.5 sec	1.90 sec	1.18 sec	0.55 sec
Frame Rate	0.15 fps	0.52 fps	0.85 fps	1.8 fps

Note: Measured with 0 sec exposure. Actual results may vary depending upon your experimental conditions.

Fairchild Imaging certifies that its products are fully inspected and tested at the factory prior to shipment, and that they conform to the stated specifications.

This product is designed, manufactured, and distributed utilizing the ISO 9001:2008 Business Management System.