Prime 95B

95% Quantum Efficiency — Prime 95B™ Scientific CMOS Camera Datasheet

Specifications	Camera Performance
Sensor	GPixel GSense 144 BSI CMOS Gen IV, Grade 1 in imaging area
Active Array Size	1200 x 1200 pixels (1.44 Megapixel)
Pixel Area	11μm x 11μm (121μm²)
Sensor Area	13.2mm x 13.2mm 18.7mm diagonal
Peak QE%	>95%
Read Noise	1.6e- (Median) 1.8e- (RMS)
Full-Well Capacity	80,000e- (Combined Gain) 10,000e- (High Gain)
Dynamic Range	50,000:1 (Combined Gain)
Bit Depth	16-bit (Combined Gain) 12-bit (High Gain)
Readout Mode	Rolling Shutter Effective Global Shutter
Binning	2x2 (on FPGA)
Linearity	>99.5%

Cooling Performance	Sensor Temperature	Dark Current
Air Cooled	-20°C @ 25°C Ambient	0.55e-/pixel/second
Liquid Cooled	-25°C @ 25°C Ambient	0.3e-/pixel/second

Specification	Camera Interface
Digital Interface	PCIe, USB 3.0
Lens Interface	C-Mount
Mounting Points	2x 1/4"-20 mounting points per side to prevent rotation
Liquid Cooling	Quick Disconnect Ports

Triggering Mode	Function
Input Trigger Modes	Trigger First: Sequence triggered on first rising edge Edge: Each frame triggered on rising edge SMART Streaming: Fast iteration through multiple exposure times
Output Trigger Modes	First Row: Expose signal is high while first row is acquiring data Any Row: Expose signal is high while any row is acquiring data All Rows: Effective Global Shutter – Expose signal is high when all rows are acquiring data Signal is high for set Exposure time Rolling Shutter: Effective Global Shutter – Expose signal is high when all rows are acquiring data Signal is High for set Exposure time – Readout Time
Output Trigger Signals	Expose Out (up to four signals), Read Out, Trigger Ready

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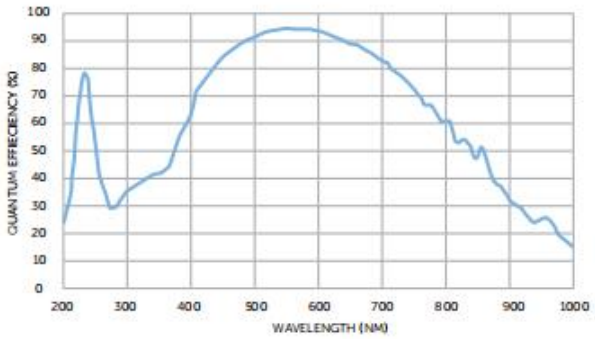


Frame Rate (PCIe interface)		
Array Size	16-bit	12-bit
1200 x 1200	40	80
1200 x 512	94	188
1200 x 256	188	374
1200 x 128	374	737

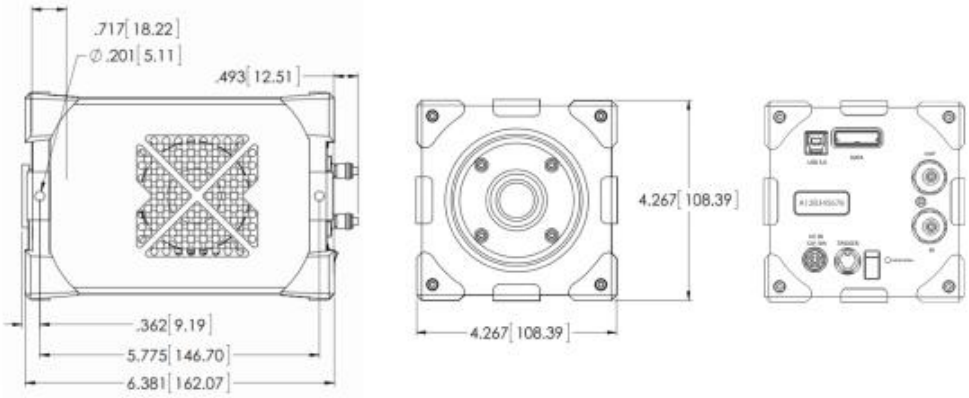
Accessories (Included)

PCIe Card/Cable	Power Supply
USB 3.0 Cable	Manuals and QuickStart Guide
Trigger Cables	Performance and Gain Calibration Test Data

Accessories (Additional)

Liquid Circulator
Liquid Cooling Tubes

Distance from C-mount to sensor



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Prime BSI

Focus on the Details — **Prime BSI™ Scientific CMOS Camera Datasheet**

Specifications		Camera Performance
Sensor		Gpixel GSENSE2020BSI Scientific CMOS Sensor
Active Array Size		2048 x 2048 (4.2 Megapixel)
Pixel Area		6.5μm x 6.5μm (42.25μm²)
Sensor Area		13.3mm x13.3mm 18.8mm diagonal
Peak QE%		>95%
Read Noise:	Correlated Multi-Sampling (CMS)	1.0e⁻ (Median) 1.1e⁻ (RMS)
	Combined/High Gain	1.6e⁻ (Median) 1.8e⁻ (RMS)
Full-Well Capacity		45,000e⁻ (Combined Gain) 10,000e⁻ (High Gain) 1,000e⁻ (CMS)
Dynamic Range		25,000:1 (Combined Gain)
Bit Depth		16-bit (Combined Gain) 12-bit (CMS) 11-bit (High Gain)
Readout Mode		Rolling Shutter Effective Global Shutter Programmable Scan Mode (PCI-E only)
Binning		2x2 (on FPGA)
Linearity		>99.5%

Cooling Performance	Sensor Temperature	Dark Current
Air Cooled	-20°C @ 30°C Ambient	0.5e⁻/pixel/second
Liquid Cooled	-30°C @ 30°C Ambient	0.12e⁻/pixel/second

Specification	Camera Interface
Digital Interface	PCIe, USB 3.0
Lens Interface	C-Mount
Mounting Points	2x 1/4"-20 mounting points per side to prevent rotation
Liquid Cooling	Quick Disconnect Ports

Triggering Mode	Function
Input Trigger Modes	Trigger First: Sequence triggered on first rising edge Edge: Each frame triggered on rising edge SMART Streaming: Fast iteration through multiple exposure times
Output Trigger Modes	Any Row: Expose signal is high while any rows acquiring data Rolling Shutter: Effective Global Shutter - Expose signal is high when all rows are acquiring data Signal is High for set Exposure time + Readout Time First Row: Expose signal is high while first row is acquiring data Line Output: Expose signal provides rising edge for each row advanced by the rolling shutter readout
Output Trigger Signals	Expose Out (up to four signals), Read Out, Trigger Ready

Programmable Scan Mode	Function
Scan Modes	Auto: Normal camera operation Line Delay: Control rolling shutter propagation rate by adding delays to the line time Scan Width: Control number of rows between reset and readout signal in the rolling shutter
Scan Direction	Down: Rolling shutter readout begins at the top of the sensor Up: Rolling shutter readout begins at the bottom of the sensor Down/Up Alternate: Rolling shutter readout alternates direction after starting at the top of the sensor

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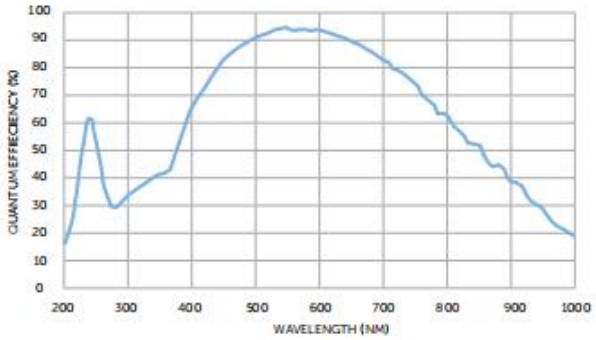
Focus on the Details — **Prime BSI™ Scientific CMOS Camera Datasheet**



Accessories (Included)

- USB 3.0 Cable
- Trigger Cable
- Power Supply
- Quickstart Guide

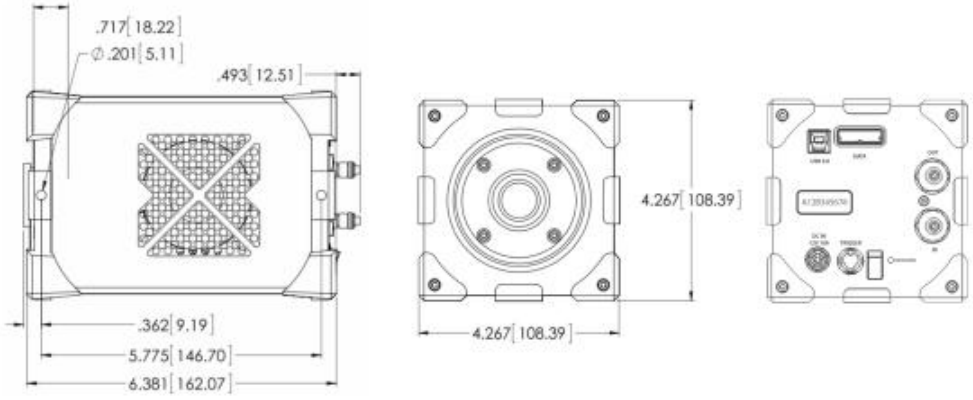
Frame Rate

	PCI-Express		USB 3.0	
Array Size	16-bit / 12-bit	11-bit	16-bit / 12-bit	11-bit
2048 x 2048	43	63	43	63
2048 x 1024	87	125	87	125
2048 x 512	173	250	173	250
2048 x 256	346	497	346	497
2048 x 128	687	979	687	979

Accessories (Additional)

- PCIe Card/Cable
- Liquid Circular
- Liquid Cooling Tubes

Distance from C-mount to sensor



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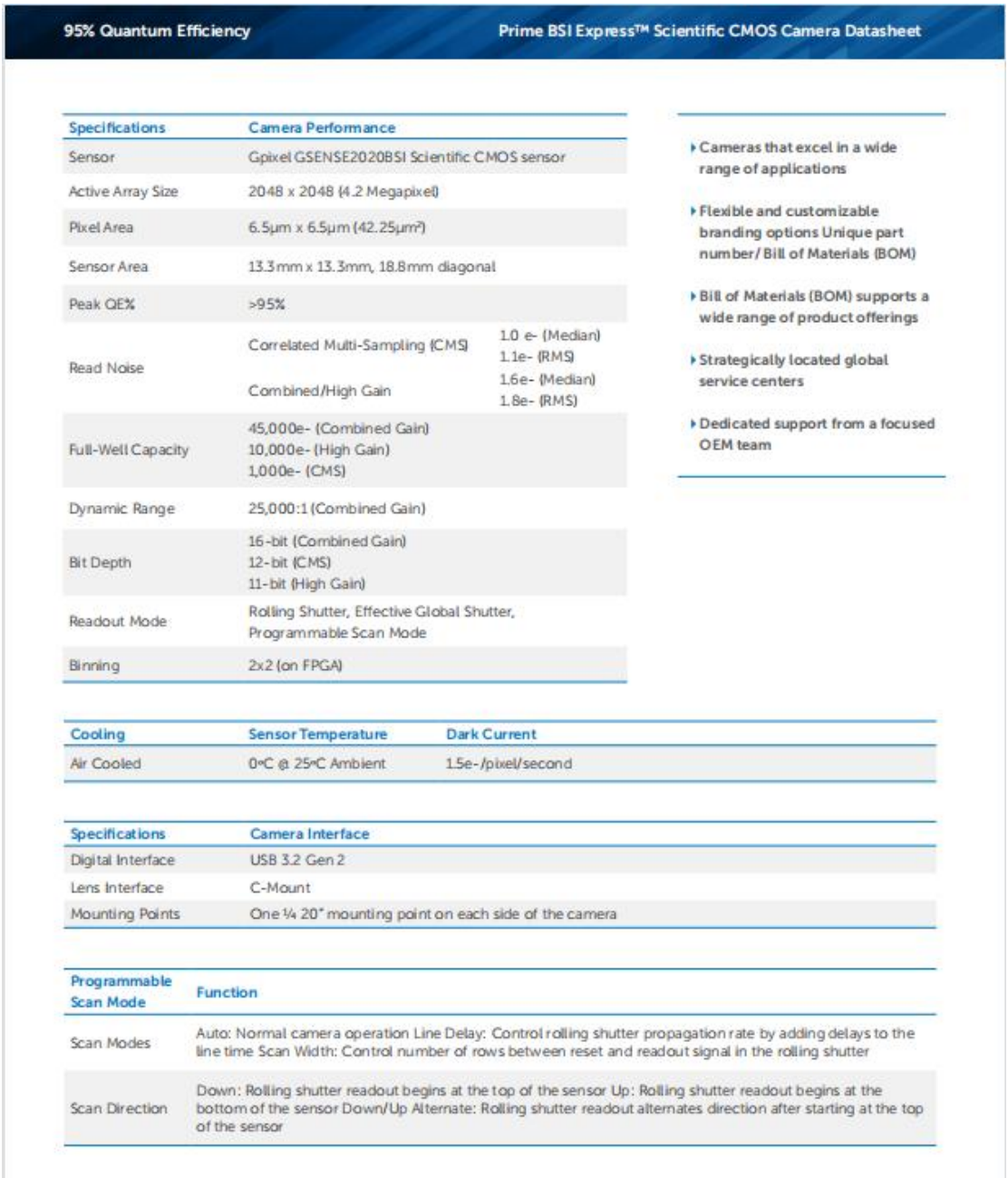
Prime BSI Express



95% Quantum Efficiency

Prime BSI Express™ Scientific CMOS Camera Datasheet

Specifications	Camera Performance	
Sensor	Gpixel GSENSE2020BSI Scientific CMOS sensor	
Active Array Size	2048 x 2048 (4.2 Megapixel)	
Pixel Area	6.5µm x 6.5µm (42.25µm²)	
Sensor Area	13.3mm x 13.3mm, 18.8mm diagonal	
Peak QE%	>95%	
Read Noise	Correlated Multi-Sampling (CMS)	1.0 e- (Median) 1.1e- (RMS)
	Combined/High Gain	1.6e- (Median) 1.8e- (RMS)
Full-Well Capacity	45,000e- (Combined Gain) 10,000e- (High Gain) 1,000e- (CMS)	
Dynamic Range	25,000:1 (Combined Gain)	
Bit Depth	16-bit (Combined Gain) 12-bit (CMS) 11-bit (High Gain)	
Readout Mode	Rolling Shutter, Effective Global Shutter, Programmable Scan Mode	
Binning	2x2 (on FPGA)	

- Cameras that excel in a wide range of applications
- Flexible and customizable branding options Unique part number/ Bill of Materials (BOM)
- Bill of Materials (BOM) supports a wide range of product offerings
- Strategically located global service centers
- Dedicated support from a focused OEM team

Cooling	Sensor Temperature	Dark Current
Air Cooled	0°C @ 25°C Ambient	1.5e-/pixel/second

Specifications	Camera Interface
Digital Interface	USB 3.2 Gen 2
Lens Interface	C-Mount
Mounting Points	One ¼ 20° mounting point on each side of the camera

Programmable Scan Mode	Function
Scan Modes	Auto: Normal camera operation Line Delay: Control rolling shutter propagation rate by adding delays to the line time Scan Width: Control number of rows between reset and readout signal in the rolling shutter
Scan Direction	Down: Rolling shutter readout begins at the top of the sensor Up: Rolling shutter readout begins at the bottom of the sensor Down/Up Alternate: Rolling shutter readout alternates direction after starting at the top of the sensor

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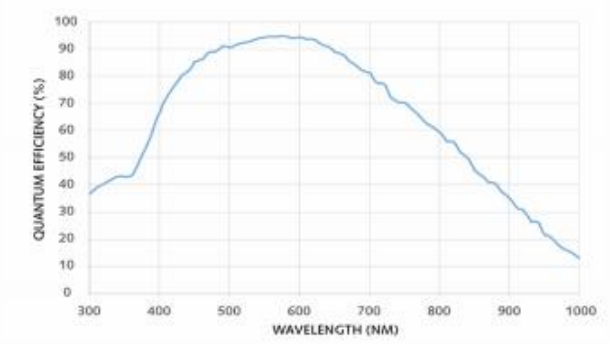
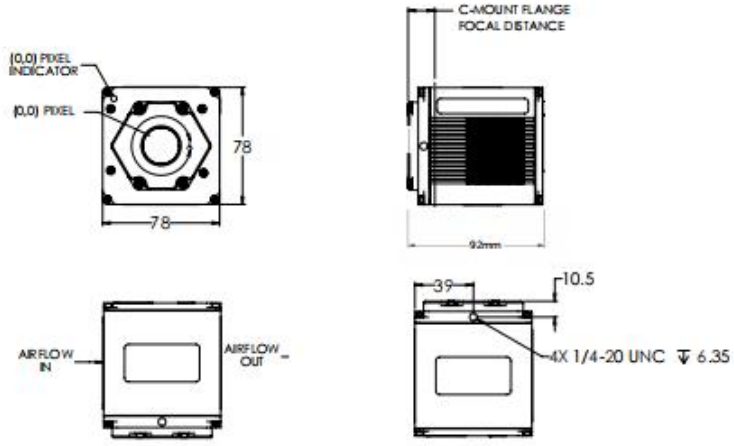


Accessories (Included)

- USB 3.2 Gen 2 Cable
- Power Supply
- Manual
- Quick Start Guide

Frame Rate

Array Size	16-bit	11-bit	12-bit (CMS)
2048x2048	43	95	43
2048x1024	87	188	87
2048x512	174	375	174
2048x256	347	745	347
2048x128	690	1468	690



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