PRIME 95B CMOS CAMERA

KEY FEATURES

- World's first backside illuminated CMOS sensor
- 95% quantum efficiency
- 82 frames a second
- Large 11 µm pixels
- Low 1.6 e^- read noise
- Multiple field of view options: 18.8 mm, 22 mm, or 25 mm
- Large full well capacity, can handle intense signal levels
- High dynamic range

TYPICAL APPLICATIONS

- Single-molecule imaging FRET, TIRF
- Super-resolution microscopy (PALM, STORM, DNA-PAINT)
- Spinning disk confocal imaging
- Live cell imaging
- Calcium imaging
- Fluorescence Imaging

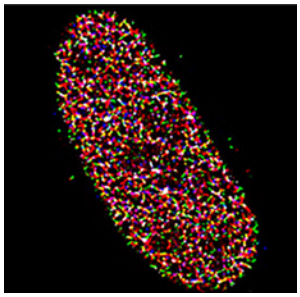
RELIABILITY

- Three-year warranty
- Extended warranty available

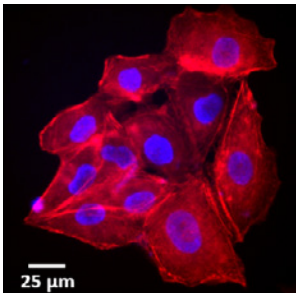
The World's First Back-Illuminated CMOS

The Prime 95B pioneered back-illumination technology for CMOS, and offers extreme sensitivity thanks to a combination of peak 95% quantum efficiency, large 11 µm pixels and low noise. The Prime 95B also operates at high frame rates across a large sensor, consistently outperforming EMCCD cameras.

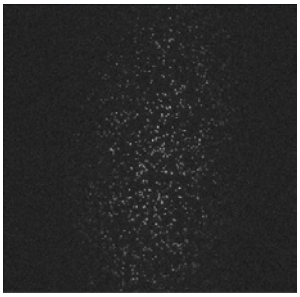
Powerful and easy to use, the Prime 95B delivers high frame rates, a large field of view, and extremely low read noise since launch in 2016, making it a proven and tested option for scientific imaging across a wide variety of applications.



STORM Super Resolution
Prof. Eli Rothenberg



Calcium Imaging
Prof. Rof O'Connor



Single-molecule FRET
Prof. Keith Weninger

PRIME 95B SPECIFICATIONS

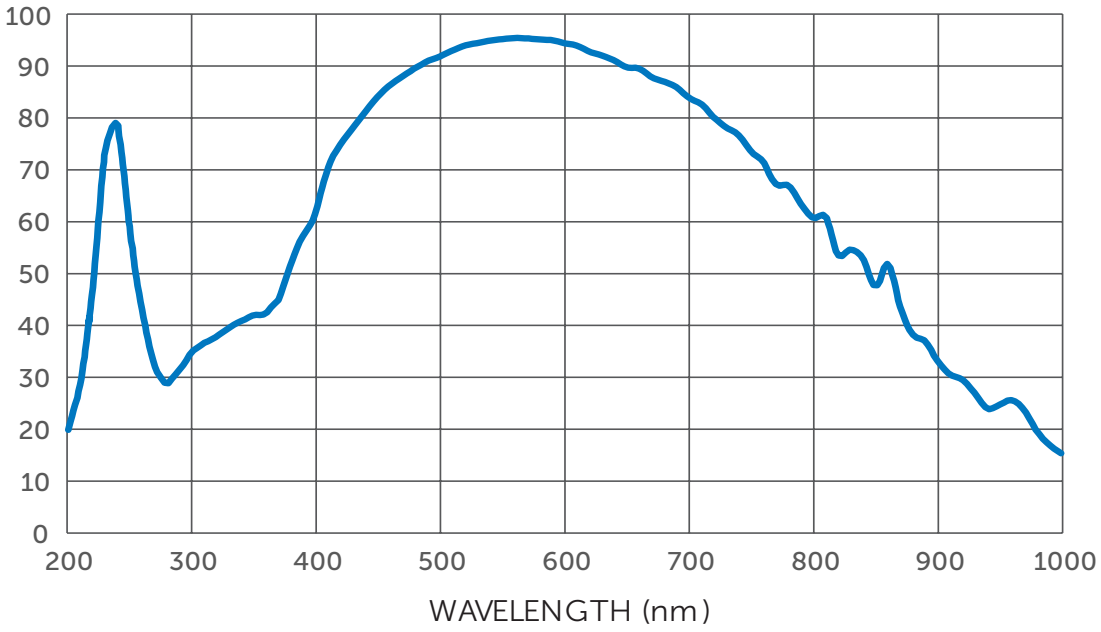
SPECIFICATIONS	Camera Performance
Sensor	GPixel GSense 400 BSI CMOS Gen IV, Grade 1 in imaging area
Active Array Size	1200 x 1200 pixels (1.44 megapixel)
Pixel Area	11 µm x 11 µm (121 µm^2)
Sensor Area	13.2 mm x 13.2 mm (18.7 mm diagonal)
Peak QE%	> 95%
Readout Modes	Rolling shutter
	Effective global shutter
Digital Binning	2 x 2
Linearity	> 99.5%
Cooling Options	Air cooled (15 °C @ 25 °C ambient, 0.5 e$^-$/pixel/second dark current)
	Liquid cooled (-25 °C @ 25 °C ambient, 0.55 e$^-$/pixel/second dark current)
Digital Interfaces	PCI-Express Gen 2
	USB 3.0
Lens Interfaces	C-mount
Mounting Points	2 x ¼"-20 TPI mounting points per side to prevent rotation
Camera Weight	1.7 kg, 3.7 lbs

CAMERA MODES

SPECIFICATIONS	Sensitivity (200 MHz)	HDR (100 MHz)
Bit Depth	12-bit	16-bit
Frame Rate (Full Frame)	82 fps	41 fps
Read Noise	1.6 e$^-$	1.6 e$^-$
Cooling (Air)	-15 °C	-15 °C
Line Time	10.1 µsec/line	20.3 µsec/line
Dark Current (Air)	0.55 e$^-$/p/sec	0.55 e$^-$/p/sec
Full Well Capacity	10,000 e$^-$	80,000 e$^-$

TRIGGERING MODE	Function
INPUT TRIGGER MODES	
Trigger First	Sequence triggered on first rising edge
Edge Trigger	Each frame in sequence triggered by rising edge
SMART Streaming	Fast iteration through multiple exposure times, works with the four trigger out cables to control multiple light sources at multiple exposure times
OUTPUT TRIGGER MODES	
Any Row	Expose signal is high while any row is acquiring data
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
EFFECTIVE GLOBAL SHUTTER TRIGGER MODES	
All Row	Expose out signal high for exposure time, maintains exposure time but drops frame rate
Rolling Shutter	Expose out signal high for exposure time – readout time. Keeps frame rate but drops exposure time
OUTPUT TRIGGER SIGNALS	
Expose Out (up to four signals), Read Out, Trigger Ready	

PRIME 95B QE CURVE

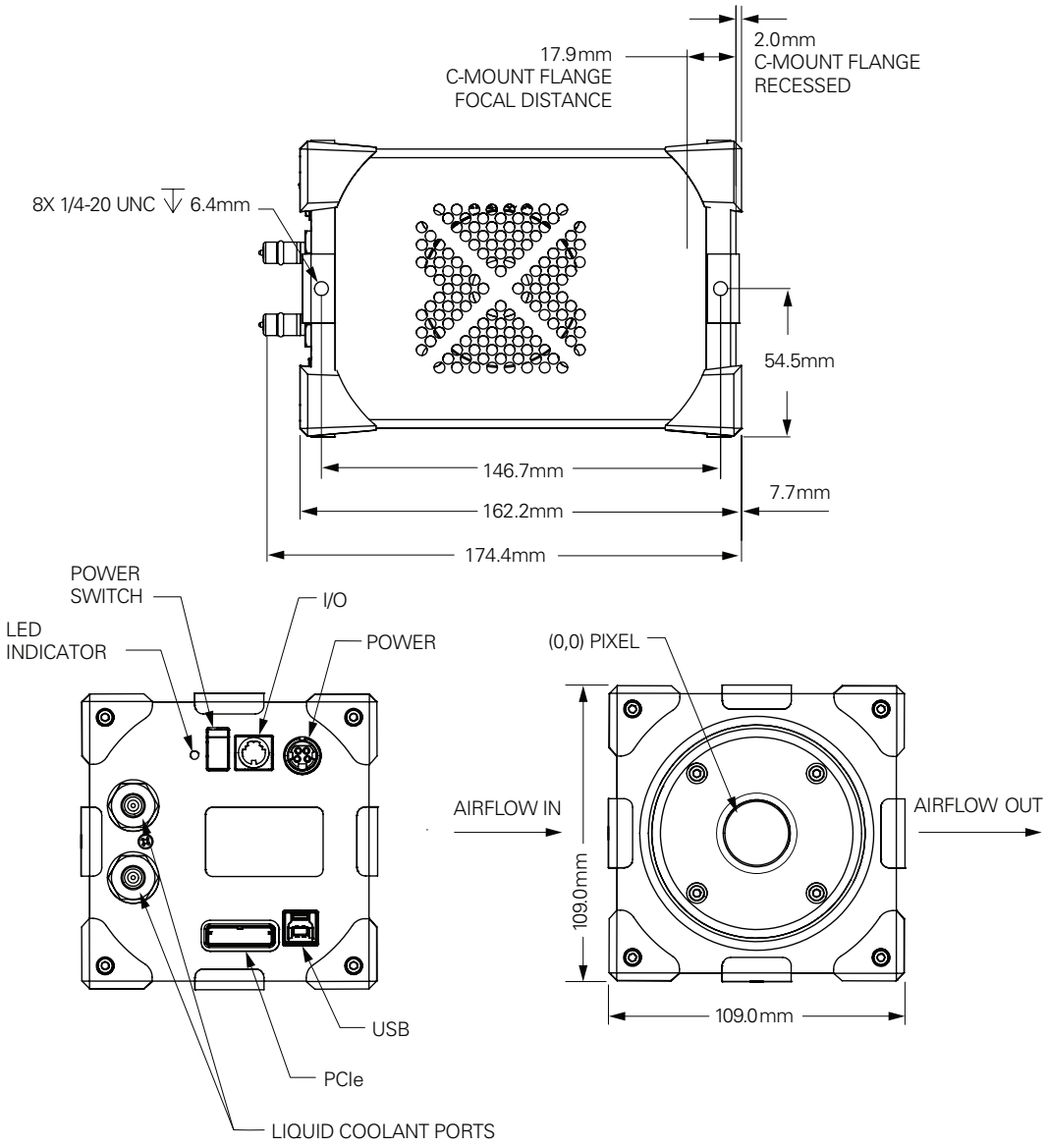


PRIME 95B SPEED TABLE

FRAME RATES (HZ)		
ARRAY SIZE	HDR (16-bit)	SENSITIVITY (12-bit)
1200 x 1200	40	80
1200 x 512	94	188
1200 x 256	188	374
1200 x 128	374	737

No change in frame rate between PCIe or USB 3.0 interfaces

PRIME 95B DIMENSIONAL OUTLINES (UNIT: MM)



PRIME 95B ACCESSORIES

ACCESSORIES (INCLUDED)	
USB 3.2gen2 10Gbs interface card	Power supply (12V/10A DC)
USB 3.2gen2 10Gbs A-C 0.9 m	PVCAM drivers/software
USB 3.2gen2 10Gbs C 3 m	Quick installation guide
BNC trigger cable	Performance and gain test data

FOR MORE INFORMATION REACH OUT ONLINE:

CONTACT US: photometrics.com/contact
FOR OEM INQUIRIES: photometrics.com/oem-page
CONTACT SUPPORT: photometrics.com/contact/support

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