

LARGE FORMAT 8K X 8K sCMOS VISION64



High Frame Rate

40 fps & 12-bit per pixel (140 fps 2x2 binning)

Large Full Well

>250k e-/pixel low-gain, 15,000 e- high-gain only

Complete System

Camera Head - Computer - Software

High QE >90% Peak

Back-illuminated sCMOS sensor (multi-layer AR coated)

Rolling/Global Shutter, HDR

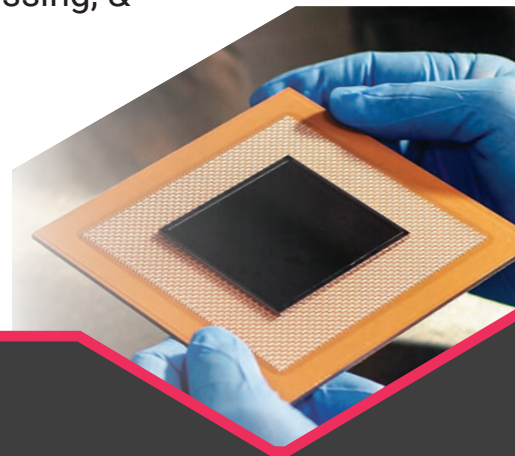
TE Cooling to -25c

Low dark current

Spectral Instruments Inc.

The World Leader in large format Cooled CCD Cameras now brings you CMOS Cameras

Announcing a new integrated camera system for demanding high-resolution, high-speed optical imaging applications. Featuring a back-thinned 8K x 8K high-speed sCMOS sensor mounted in a TEC-liquid cooled camera head that's connected to a real-time or on-the-fly image acquisition, processing, & storage system capable of operating at the full image rate. The sensor can be read using high-gain output for lowest noise, low-gain output for best signal to noise, or HDR mode combining both outputs for the widest dynamic range.



Specifications (Preliminary)

Camera & Sensor

Pixel Pitch	6.5 μm	Full Well	15 ke- high gain, >250ke- low gain & HDR
Array Size	8,192 x 8,192 pixels	Sensor Temperature	-20C absolute
Active Area	53 mm x 53 mm	Quantum Efficiency	>80% peak
Sensor Type	Custom high-speed design with on-chip CDS	Frame Rate 1x1 binned	40 fps 12 bit/pixel
Readout Modes	Rolling shutter, Global Shutter, HDR, 2x2 binning	Frame Rate 2x2 binned	140 fps 12 bit/pixel
Readout Noise	<10 e-		

Image Acquisition System

8 lane CoaXExpress interface to camera
Nvidia Quadro A4000 GPU
Option for up to 25 TB high-speed SSD RAID 0 array for real-time data streamlining at the maximum camera frame rate
Option for up to 32 TB HDD RAID 5 array for additional data storage (transferring data from the SSD acquisition disks to this drive)
GUI for camera control and visualization
API for custom control of the camera & retrieval of image data (SDK has examples in Python, C++, & C#; other languages also possible)
Data storage in TIFF, MRC, or HDFS format (we are also open to adding other file formats if needed)
Flat-field correction, bad pixel correction, and data storage occur in real-time (enabling continuous acquisition)



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