

*Selection/Satisfaction/Service = The AMT Advantage*

## **NanoSprint5: Low Noise sCMOS-Materials Science Camera**

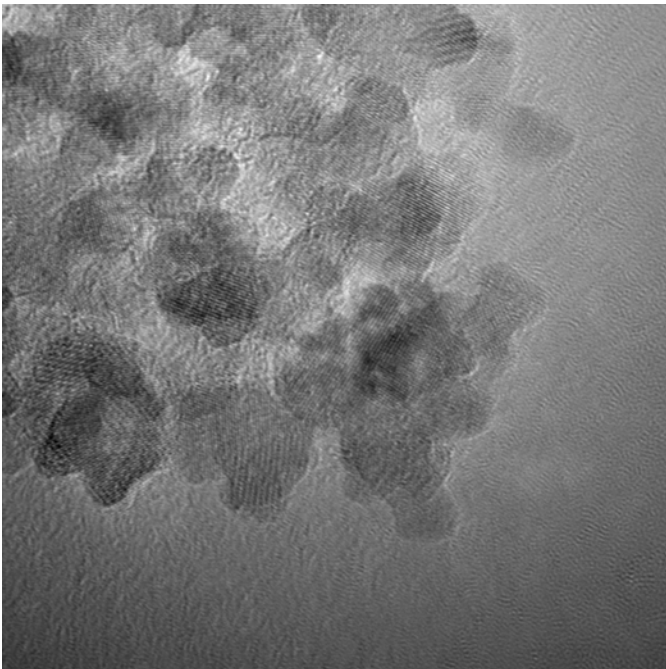
**5.0 Megapixel Scientific CMOS Sensor**  
**40 Frames per Second Readout**  
**2.3 Electrons per Pixel Readout Noise**  
**Non-blooming sensor**  
**USB 3.0 Interface**  
**AMT's Proven High Performance A- Lens**



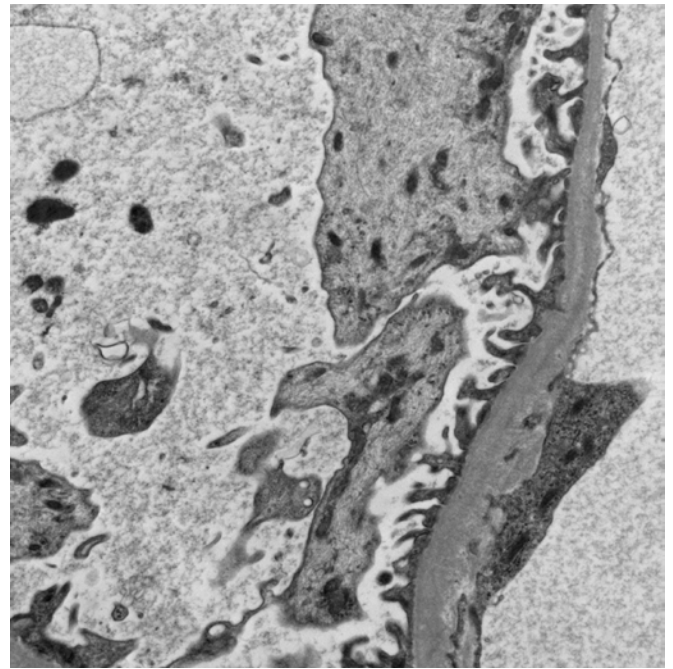
The NanoSprint5 is a 5 Megapixel camera system that is available in the wide-angle side mount, low mount, and mid mount TEM positions. Given its combination of speed and sensitivity, it is ideal for both life-science and materials research including diffraction via SAD and CBED. When the NanoSprint5 is mounted in the 35 mm port, it becomes a wide-angle viewing system that not only runs independently but also can complement a slow, high definition camera and/or below column spectrometers.

### **Perfect for Multi-user facilities**

#### **Materials Science**



#### **Biological Research**



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NanoSprint5 Rev 1

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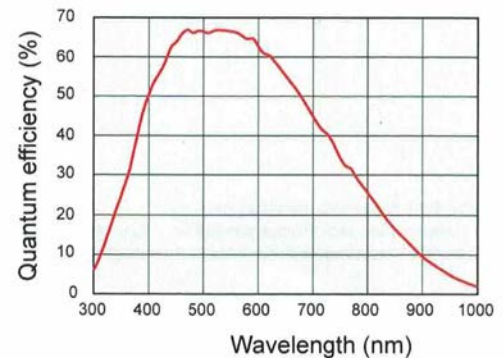
### **Sensor and Camera Head:**

- 1) 2464 x 2048 x 3.4 $\mu$ m pixels
- 2) Maximum readout rate 40 fps at full field and full resolution and 130 fps at 2x2 binning.
- 3) 2.3 electrons per pixel readout noise at full speed with negligible pattern noise.
- 4) 4500:1 inherent dynamic range without frame integration with 12 bit readout.
- 5) 16 bit dynamic range with frame integration.
- 6) Electronic shutter with no beam blanking or mechanical shutter required.
- 7) High speed USB3.0 digital interface.

**AMT's A-Lens** combines extraordinary speed with high resolution. This lens maintains both high MTF and high numerical aperture (NA) to provide unmatched sharpness and extremely high sensitivity. This lens also has negligible distortion across the entire field and maintains focus at all corners.

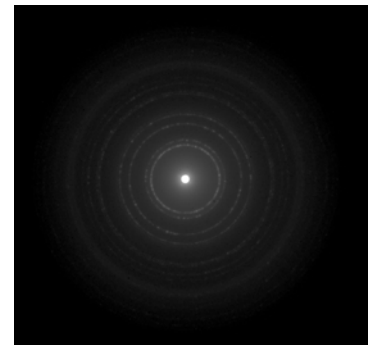
### **A- Lens:**

- 1) Finite-conjugate, color corrected AMT A-Lens with 0.30x magnification.
- 2) Lens maintains >50% MTF @ 130 line-pairs/mm
- 3) Numerical aperture of 0.27 @image.
- 4) Distortion <1% across the field.
- 5) All lens components and glass-shielding are melt characterized, are AR coated, and are made with demanding 1/10 to 1/4 wave optical surface flatness.



### **Vacuum and Mechanical:**

- 1) All seals are either static or rotating to avoid possibility of catastrophic vacuum failure.
- 2) All electronics are outside the TEM vacuum.
- 3) Proprietary P43 phosphor and substrate for minimum structured background.
- 4) Radiation shielding for 200kV standard with shielding for higher energy system available



### **System configurations include:**

**NanoSprint5S-A** Classic wide-angle side-mount

**NanoSprint5M-A** Mid-mount that spans the TEM's magnification range

**NanoSprint5L-A** Low-mount for high magnification

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