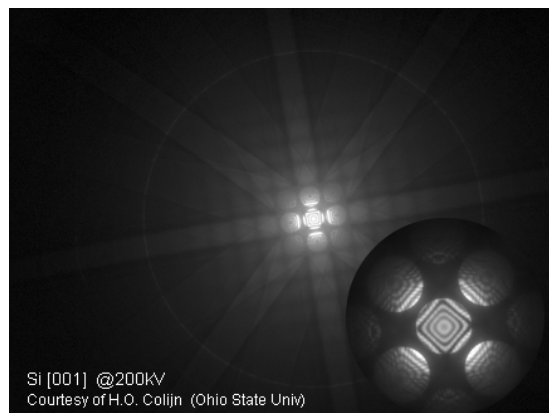


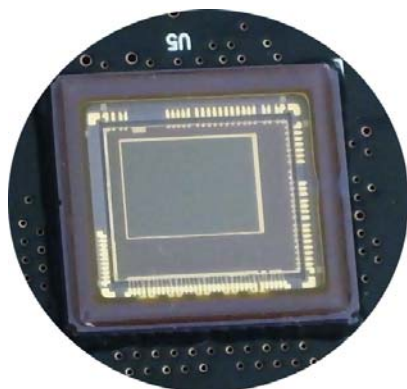
Selection/Satisfaction/Service = The AMT Advantage

XR280: CMOS-Based TEM Diffraction & Imaging Camera

2.8 Megapixel Scientific CMOS Sensor
30 Frames per Second Readout
3 Electrons per Pixel Readout Noise
Non-blooming sensor
IEEE 1394B Interface
AMT's Proven High Performance A- Lens
Smoother and Brighter Phosphors



The XR280 features a CMOS sensor that simultaneously achieves high resolution, fast readout speeds, and extremely low noise levels. Generally, CMOS sensors are non-blooming, which is a significant advantage over conventional CCD sensors - especially in diffraction studies. This sensor is combined with AMT's high NA optics to achieve a new level of speed, sensitivity and dynamic range for both imaging and diffraction.



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.

AMT's advanced phosphor and substrate technologies produce brighter images with less structured noise than competing phosphor, while resisting beam damage. Note that reducing structured noise improves both aesthetics and quantitative data quality. Images are uncorrected.

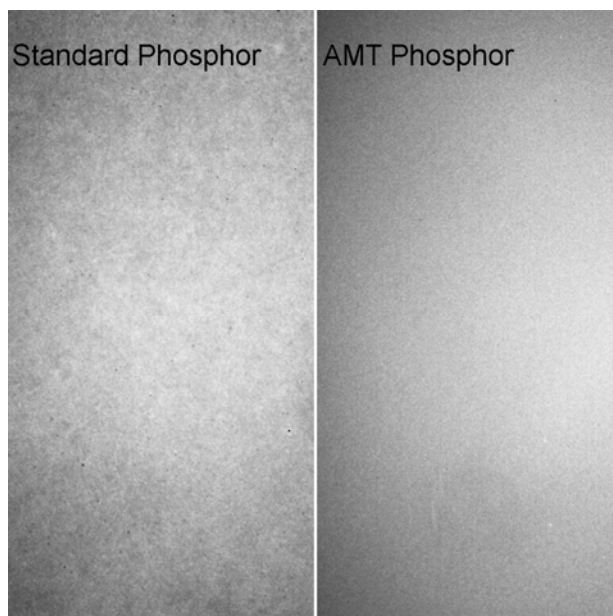
AMT's software is also well regarded for its efficiency and ease-of-use which help make AMT's system productivity enhancers.

System configurations include:

XR280S-A: Classic wide-angle side-mount

XR280M-A: Mid-mount that spans TEM's magnification range

XR280L-A: Low-mount with high magnification



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XR280 Combo4 Rev 1c

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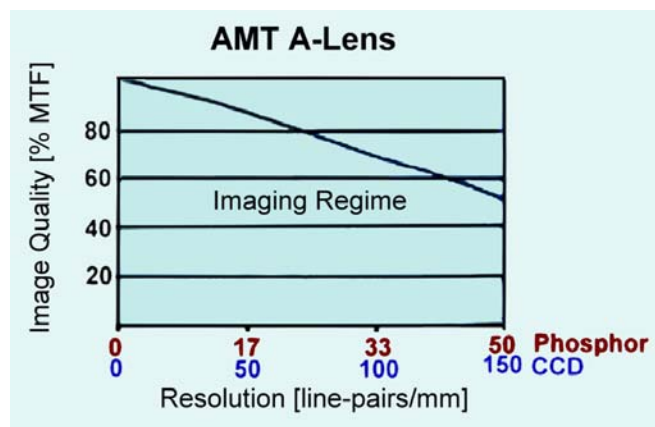
General Specifications

Sensor:

- 1) Scientific grade, FL-280 sCMOS sensor with on-chip A/D converters at each column.
- 2) 1920 x 1440 x 3.8 μm pixels with 14x16 mm active area.
- 3) Maximum readout rate 30 fps at full field and full resolution.
- 4) 3 electrons per pixel readout noise at full speed with negligible pattern noise.
- 5) 4500:1 inherent dynamic range without frame integration with 12 bit readout.
- 6) Greater than 16 bit dynamic range with frame integration: for example, 18 bits after 256 x 20ms integrations (6 sec).
- 7) On-chip analog gain, for imaging at short exposures.
- 8) Electronic Shutter with no beam blanking or mechanical shutter required with single exposures adjustable from 20 ms to 1 sec.
- 9) High speed IEEE1394b digital interface.

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) Phosphor characteristic optimized for kV and application
- 5) Radiation shielding for 200kV standard. Shielding for higher energy system available.

Software and Computer

- 1) Win7 x 32 bit OS standard. Win7 x 64 bit and WinXP x 32 bit available. (See separate computer specification for more details.)
- 2) The software package includes a comprehensive graphical interface for camera operation, image display, and image storage.
- 3) AMT systems communicate with SerialEM, TIA, TEMography, and all modern TEM remote control interfaces when such interfaces are available.
- 4) A more extensive list of operating and analysis functions is available a separate document.

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