EclipseXRM
3D X-Ray at nano-scale resolution

SIGRAY

EclipseXRM

3D X-RAY AT NANO-SCALE RESOLUTION

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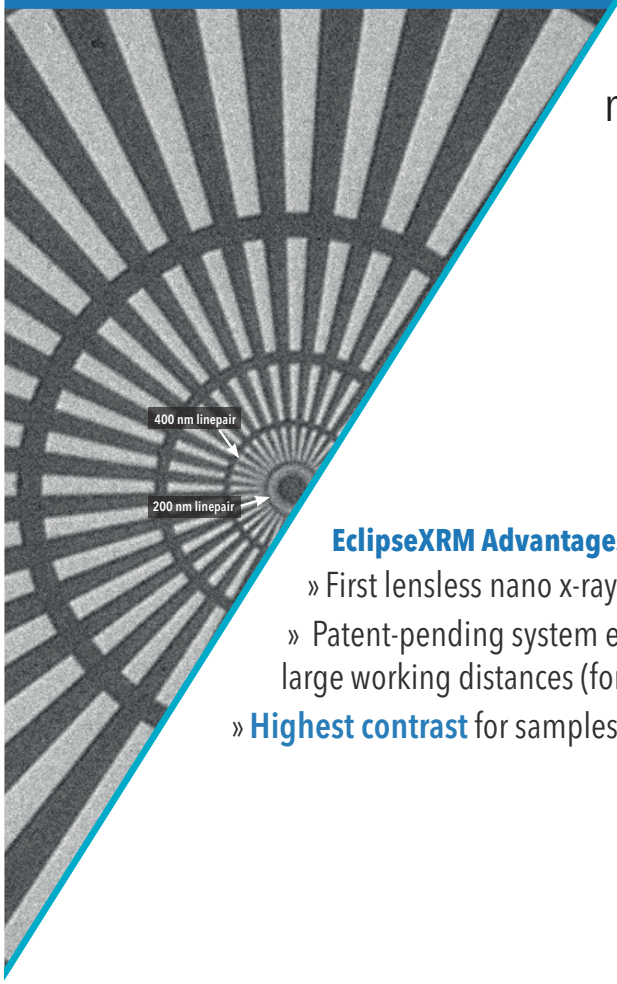
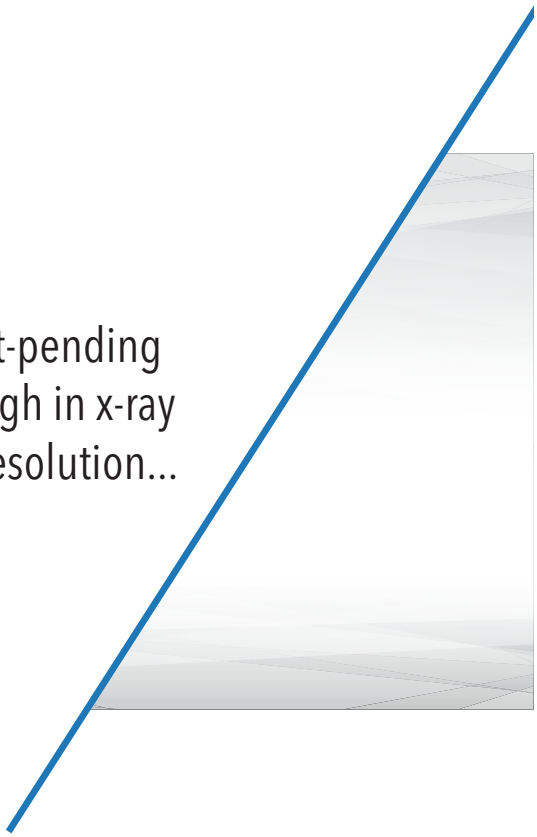
EclipseXRM
3D X-Ray at nano-scale resolution

EclipseXRM is designed for ultimate performance and flexibility in imaging a wide range of applications. It enables both large FOV scans at coarse resolutions and detailed images at 300nm resolution. The system design features multiple x-ray sources and detectors to accommodate a wide range of sample types.



...a patent-pending breakthrough in x-ray microscopy resolution...



EclipseXRM Advantages at a Glance

» First lensless nano x-ray microscope with true **300 nm** spatial resolution

» Patent-pending system enables **maintaining submicron resolution**, even at large working distances (for larger samples and samples *in-situ*)

» **Highest contrast** for samples ranging from semiconductors to biological

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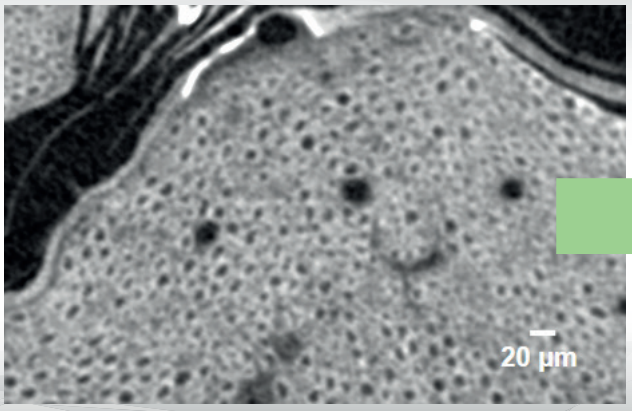
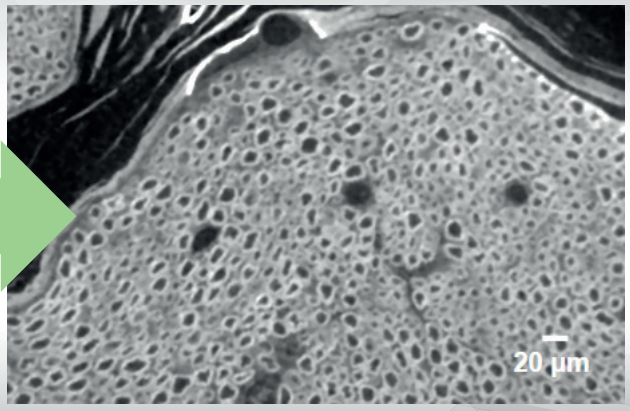
EclipseXRM is a breakthrough system that offers the combination of highest spatial resolution and highest contrast capabilities on the market.

Previous Leading 3D XRM/MicroCT
3D x-ray microscopy at 0.5 µm spatial resolution of sciatic nerve cells



EclipseXRM's Leading Resolution
New capabilities at 0.3 µm spatial resolution, nearly a 2-fold resolution improvement

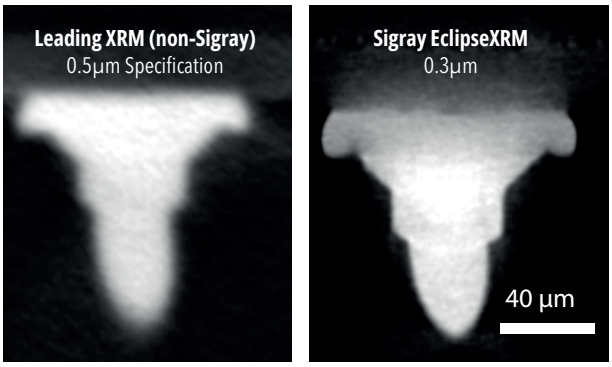


A Revolution in Resolution
Breakthrough Design for True Nanoscale Resolution

Sigray's EclipseXRM™ is a breakthrough 3D x-ray microscope (XRM) with the highest resolution capabilities among high energy x-ray microscopes. Its spatial resolution of 300nm performance eclipses that of previous leading XRMs (0.5µm).

Combining Major Innovations in X-ray Technology
Until now, leading x-ray microscopes have relied on thin scintillators coupled to objective magnification lenses (such as a 40X lens) for high resolution. Although these systems can show 0.5µm resolution on resolution targets, the practical resolution for most samples was closer to 0.8 to 1.2µm due to the low efficiency of high magnification objectives.

EclipseXRM combines major patented and patent-pending advances in x-ray source, x-ray detector, and system design. This new design can not only achieves 300nm for routine scanning, but also can maintain 360nm resolution at large working distances, such as for samples in large *in-situ* cells.



Superior Image Quality: Sigray EclipseXRM provides true 300nm resolution and vastly superior contrast for a wide range of samples ranging from large intact PC boards (shown above) to geological and biological samples.

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EclipseXRM-900™ Specifications

Parameter	Specification	
Spatial Resolution[a]	300nm spatial resolution Voxels down to sub-10nm	
Resolution at 50mm Working Distance	<500nm spatial resolution	
Source(s)	Primary: Nanofocus Source	Optional Secondary: Multi-Spectral Source (for Biological Samples & Polymers)
Target	Tungsten on diamond	Multiple target materials (up to 5) w/ diamond Examples: Ti, Cr, Fe, Cu, Rh, W, Mo, Au
Power & Max Voltage	16W, 160 kV	100W, 50 kV
X-ray Detectors		
High Resolution detector	High efficiency detector with <5µm pixels	
Large FOV detector	Standard Flat Panel detector: 6.7MP with 50 µm pixels Larger formats (13MP or 27MP) available upon request.	
Rotary Stage	Standard Air Bearing: 100 x 40 x 100 mm XYZ, 10 kg load (recommended) *Optional Alternate Mechanical: 50 x 100 x 50 mm XYZ, 25 kg load	
Additional Features	Phase contrast with phase retrieval Off-set tomography Helical scan	
Software	Acquisition: Sigray3D Intuitive Software with Machine Learning Reconstruction: Sigray GiganRecon - Fasteset reconstruction algorithm on the market Advanced Analysis: Optional ORS Dragonfly and/or Avizo Data Analysis	

[a] Spatial resolution for absorption mode measured with 2D resolution standard. Spatial resolution is a stricter standard than other "resolution" figures of merit such as pixel, voxel, and minimum detectable feature.

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