**Product Overview**

**Key Benefits**

- High resolution 3D X-ray imaging on small and large samples
- Microscope design enables highest resolution at the largest working distance from the source, a prerequisite for in situ and large sample imaging
- Multi-length scale imaging of the same sample across a wide range of magnifications, down to <0.7 μm True Spatial Resolution™
- High contrast phase-enhanced imaging for low Z materials and biological samples
- Non-destructive imaging of samples with little to no sample preparation
- Supports a wide variety of in situ rigs for submicron imaging of practical sized samples (mm to inches) with weight capability up to 15 kg

**3D Submicron Imaging with True Spatial Resolution**

**Industry’s Largest Working Distance at Highest Resolution**

The Xradia VersaXRM is the latest generation in a leading class of 3D X-ray microscopy (XRM) solutions optimized for non-destructive micro tomography. The VersaXRM-500’s new source technology and high resolution detectors provide unmatched submicron resolution, even for large samples.

**Performance beyond microCT.** The VersaXRM-500 is an X-ray microscope, employing a turret of objectives, a design that produces variable magnification. This enables the user to select magnification by changing objectives or by changing the geometric magnification. Traditional microCT and “nanoCT” systems are limited to only geometric magnification. The VersaXRM enables control over resolution and phase contrast across a wide range of sample sizes and a large working distance to support a diverse range of applications:

- **Semiconductor process optimization and failure analysis**
  Non-destructive submicron imaging of intact packages for defect re-localization and characterization.

- **Virtual core analysis for oil and gas exploration**
  The Scout-and-Zoom™ process begins with a quick survey scan (scout) to identify a volume of interest before a high resolution scan (zoom) is performed on the identified region, thus achieving highest resolution of detailed structure and pore connectivity within a representative region. The resulting 3D data set may be used for special core analysis (SCAL) simulations.

- **Life sciences**
  Highest resolution and highest contrast for unstained and stained hard and soft tissues for applications such as quantification of osteocyte lacunar properties (volume, density, etc.) in bone morphology and investigation of unstained soft cartilage tissue.

- **Materials science**
  Provides view into deeply buried microstructures that may be unobservable with 2D surface imaging such as optical microscopy, SEM, and AFM; offers a wide span of abilities, from visualizing cracks in soft composite materials to measuring porosity in steel.

- **In situ measurements and time-dependent studies**
  Unique ability to maintain resolution at a distance for in situ imaging experiments in real world environments, such as tensile/compression and temperature variation tests; delivers superior flexibility with support of sample sizes up to 300 mm.

**Image samples in background (from top to right):** carbonate, concrete, network of cerebral vasculature, semiconductor packaging.
VersaXRM-500 High-Resolution, 3D X-ray Microscope

Key System Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Size Limit</td>
<td>300 mm</td>
</tr>
<tr>
<td>Stage Load Capacity</td>
<td>15 kg</td>
</tr>
<tr>
<td>X Travel</td>
<td>45 mm</td>
</tr>
<tr>
<td>Y Travel</td>
<td>100 mm</td>
</tr>
<tr>
<td>Z Travel</td>
<td>50 mm</td>
</tr>
<tr>
<td>Rotation</td>
<td>360º</td>
</tr>
<tr>
<td>Detector</td>
<td>Multi-objective turret with configurable options</td>
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<tr>
<td>Travel</td>
<td>290 mm</td>
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<tr>
<td>Source Travel</td>
<td>215 mm</td>
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<tr>
<td>Voltage Range</td>
<td>30 - 160 kV</td>
</tr>
<tr>
<td>Maximum Power</td>
<td>10 W</td>
</tr>
</tbody>
</table>

Xradia sets the standard in resolution

Performance range of traditional microCT systems: resolution rapidly degrades with increasing sample size

Substantial differences in resolution as working distance increases

Xradia Resolution Targets

- At the rotation axis of 50 mm diameter sample ≤ 1.0 μm
- At the rotation axis of 8 mm diameter sample ≤ 0.7 μm

All specifications subject to change. Please consult Xradia for current specifications.