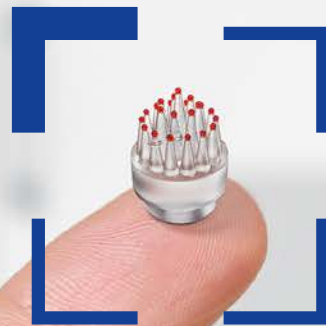


Adding measurement accuracy to X-ray microscopy.



**Metrology Extension
for ZEISS Xradia Versa**

www.zeiss.com/xray



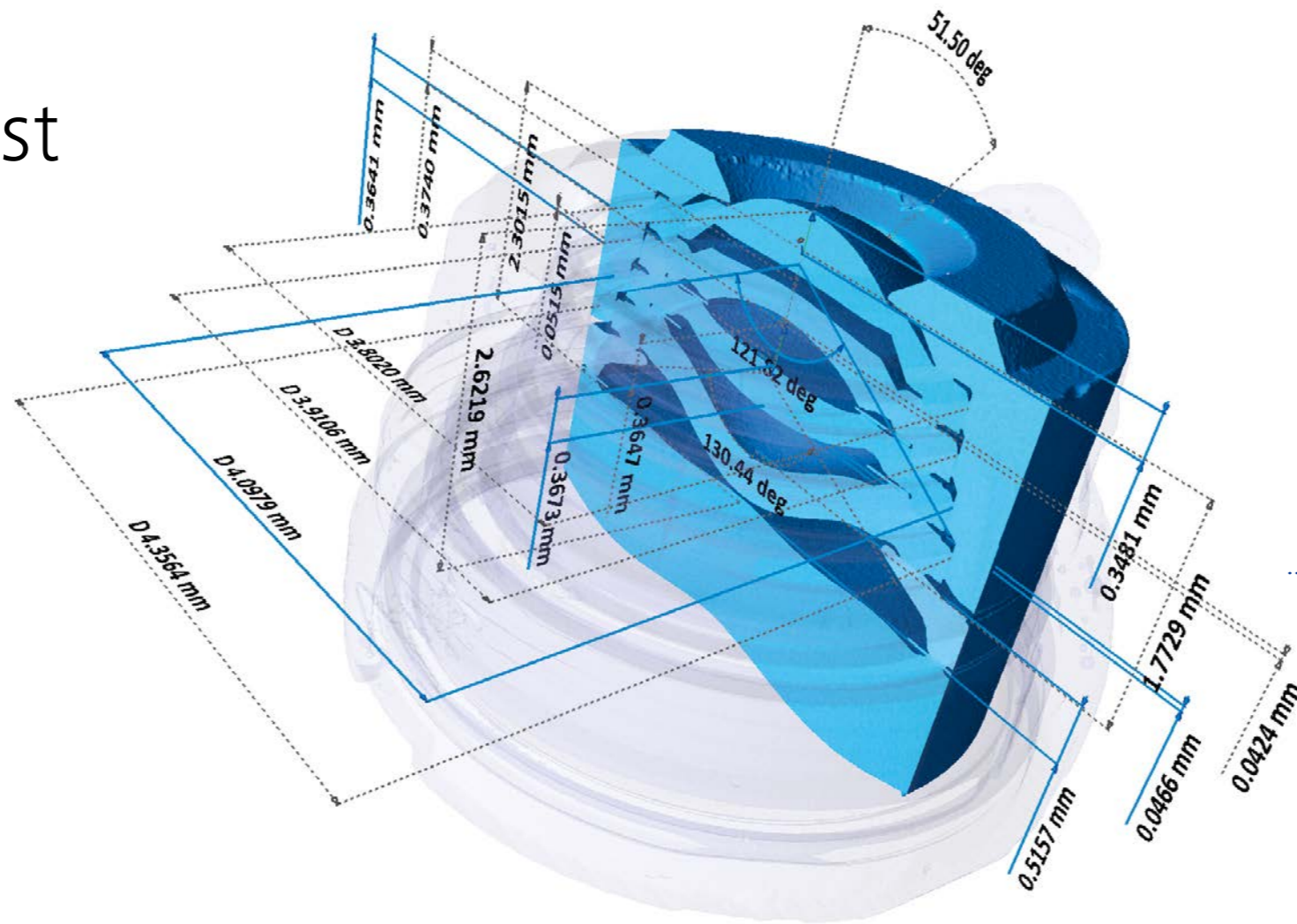
Seeing beyond

Reveal smallest dimensions.

Measure them most accurately.

Miniaturization and integration of components drive growing demand for high-resolution metrology. ZEISS introduced an entirely new realm of non-destructive insights into submicron details with Xradia Versa X-ray microscopes. Now, with **Metrology Extension for your ZEISS Xradia 620/520 Versa**, you can add measurement with an accuracy far beyond the limits of conventional CT technology.

Benefit from high-resolution X-ray imaging combined with high-precision metrology. Get verified measurement accuracy of small dimensions in reconstructed volumes of less than 125 mm³.



Small volumes at high resolution

Unlike conventional Micro-CT solutions, ZEISS Xradia Versa provides high-resolution imaging of small volumes inside larger samples, even when performing *in-situ* and 4D investigations. The MTX package complements this offering by enabling measurements at high dimensional accuracy within small reconstructed volumes of 125 mm³.



Simple calibration workflow

The MTX package provides an integrated user-guided calibration workflow, turning the resolution capability of your Versa system into verified measurement accuracy. Once the calibration routine has been executed, you can perform precise measurements and make the data available to standard metrology software for further processing.

$$1.9 \mu\text{m} + \frac{L}{100}$$

Leading CT metrology accuracy

Calibrated with MTX, ZEISS Xradia Versa systems provide a market-leading maximum permissible error (MPE) value of $MPE_{50} = (1.9 + L/100) \mu\text{m}$ for measurements in small-scale volumes, where L is the measured length in mm, opening new fields of application with the need for high-precision metrology performance in manufacturing and research.

Specifications

ZEISS Metrology Extension for ZEISS Xradia 620/520 Versa

Accuracy (MPE complies with VDI/VDE part 1.3)

SD (TS) in μm	$1.9 + L/100$ ^(1,2)
Measuring range	Max measuring length: 4.8 mm ⁽³⁾

Software

Operating Software	Scout-and-Scan Control System for ZEISS Xradia Versa
Operating System	Microsoft Windows 10
Further data processing	ZEISS CALYPSO

XRM Check

Calibration standard	XRM Check used for determining sphere-center-distance (SD) errors as per VDI/VDE 2630 -1.3 guideline
Spheres	22 ruby spheres (grade 5) with 300 μm diameter
Sphere distances	Total of 35 different sphere distances measured along 5 different lengths in 7 different planes; Largest distance measurement of 3.6 mm
Supporting structure	Made of fused silica (coefficient of thermal expansion $\approx 0.55 \times 10^{-6}/\text{K}$)
Calibration uncertainty	Reference calibration data with an uncertainty of $U (k=2) < 0,150 \mu\text{m}$.

Availability

New system compatibility	ZEISS Xradia 620 Versa
Field upgrade compatibility	ZEISS Xradia 620 Versa ZEISS Xradia 520 Versa

¹ L is the measured length in mm

² Accuracy specifications valid for measurement in a single field of view on the 4X optical magnification

³ Samples could be longer than 4.8 mm as long as region of interest for CT reconstruction fits inside the field of view