

Informative Imaging and Fast Understanding in Core Facilities.



ZEISS GeminiSEM 360

Field Emission SEM

zeiss.com/geminiSEM



Seeing beyond

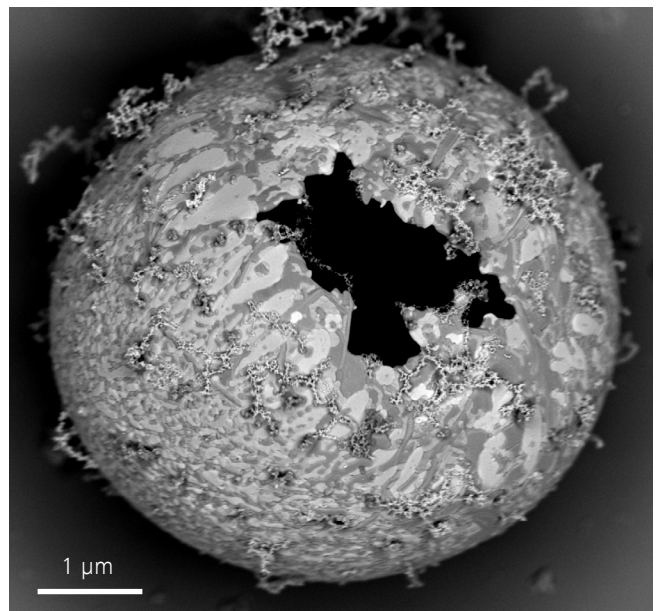
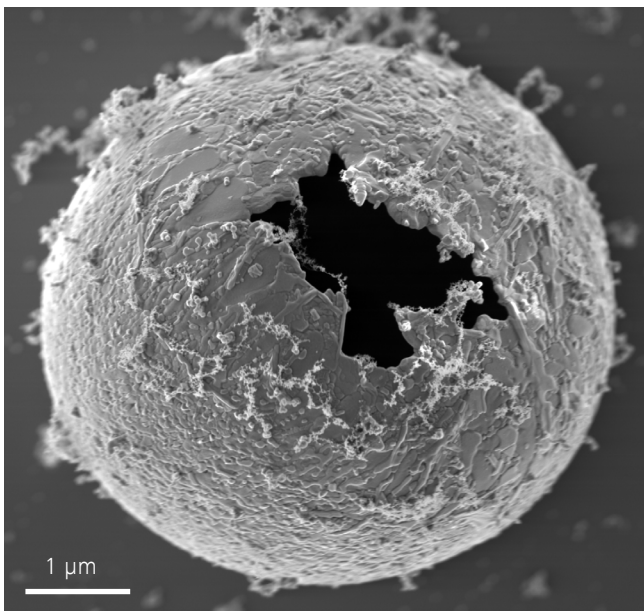
ZEISS GeminiSEM 360

Your Field Emission SEM for Informative Imaging and Fast Understanding in Core Facilities.

Discover how to image with sub-nanometer resolution effortlessly with a field emission SEM that is your tool for sample flexibility. Use it for your most demanding projects in materials and life science. Innovations in electron optics and a new chamber design let you benefit from better image quality, usability and flexibility. Combine excellence in imaging and analytics.

ZEISS GeminiSEM 360 is ideal for core facilities in academic environments, governmental bodies or industrial research laboratories. It excels over the widest range of applications and sample types. Take advantage of industry-leading high resolution imaging enabled by its Gemini 1 electron optical design.

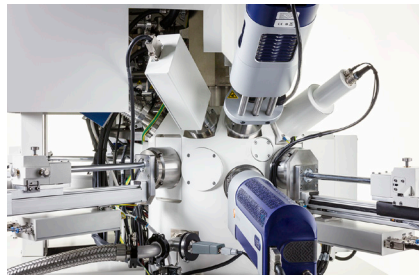
- Equip your research lab with a tool ideally suited for sample flexibility.
- Benefit from unrivalled user experience for your imaging and analytical workflows.
- Extend the capabilities of your system when your needs grow.



Particles from the flint in a fire lighter. Imaged with GeminiSEM 360, left Inlens SE image showing details on the surface, right Inlens EsB image, showing materials contrast.



Leverage comprehensive sample characterization with two unique Inlens detectors configured in parallel.



Configure your instrument tailored to your needs thanks to the versatile chamber.

Your Tool for Sample Flexibility and Increased Productivity

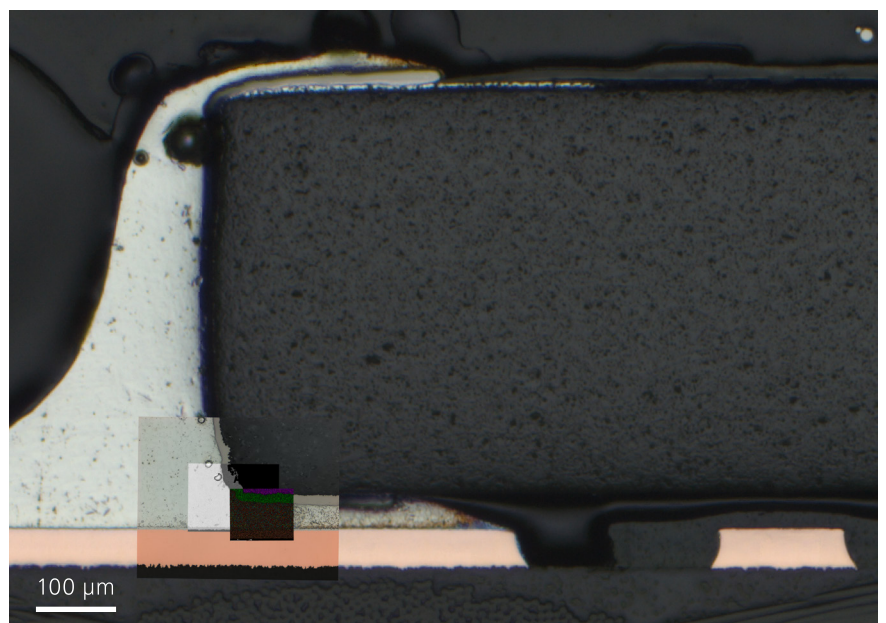
- GeminiSEM 360 is the ideal instrument for a core facility, delivering maximum versatility for materials & life science, and industry.
- The electron optical design Gemini 1 brings you the benefit of surface sensitive, high resolution images providing excellent resolution at low voltage and great speed at high probe current.
- Gather high resolution, surface- and compositional information, even on sensitive samples by using Inlens secondary and backscatter electron imaging simultaneously.
- When aiming to image non-conducting samples under lower vacuum, so-called variable pressure, there is no need to forgo Inlens contrast: NanoVP guarantees maximum versatility enabling Inlens imaging without charging.

Unrivalled User Experience

- GeminiSEM 360 delivers exceptional user experience: With its wide field of view and new, highly configurable chamber, it's easy to interrogate even very large samples.
- Enjoy seamless navigation with contextual image viewing and correlative microscopy via ZEISS ZEN Connect.
- Gain clear, crisp images easily by using autofunctions e.g. the autofocus and smart detectors.
- Perform both imaging and analytical workflows efficiently with diametrically opposite EDS ports and a coplanar EDS/EBSD geometry.
- Maximize system uptime with ZEISS Predictive Service and benefit from scheduled maintenance to take place when you are ready.

Exceptional Capability Extension

- Upgradability is essential for protecting your investment. That's why GeminiSEM 360 is plugged into the software ecosystem of ZEISS ZEN core.
- Draw on ZEN Connect to combine multimodal and multiscale data, ZEN Intellesis for advanced AI-powered segmentation, and ZEN's analytical modules for reporting and analysis of segmented data. ZEN Data Storage lets you manage projects centrally by connecting data from different instruments in your lab.
- Access workflows and scripts created by other users who can help you solve challenges by being a member of the APEER community.
- Improve your system as new capabilities are released thanks to a clear upgrade ability path.



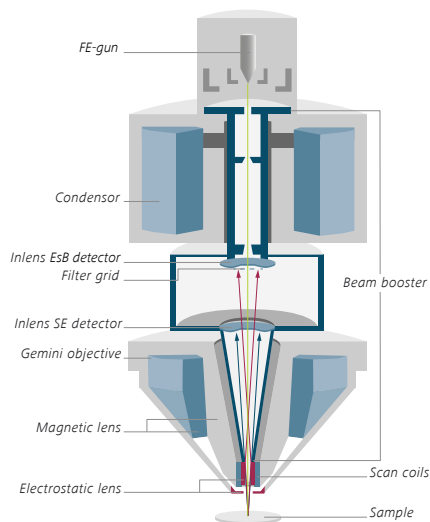
Mechanical cross-section of a printed circuit board. Sample: courtesy of T. Schubert, Materials Research Institute Aalen, Aalen University, Germany.

Technical Data

ZEISS GeminiSEM 360

ZEISS GeminiSEM 360 offers:

Essential Specifications	ZEISS GeminiSEM 360
Electron Emitter	Thermal field emission type
Resolution	0.7 nm @ 15 kV 1.2 nm @ 1 kV
Acceleration Voltage	0.02 – 30 kV
Probe Current	3 pA – 20 nA (100 nA configuration also available)
Maximum field of view in high resolution mode	5 mm @ 5 kV and WD = 8.5 mm
Frame Store Resolution	Up to 32k × 24k pixels
Chamber Size	360 mm inner diameter 270 mm height
Specimen Stage	X = 130 mm; Y = 130 mm Z = 50 mm T = -4° to 70° R = 360° (continuous)



ZEISS GeminiSEM 360: The Gemini 1 optical column consists of a beam booster, Inlens detectors and a Gemini objective.

Exploit Gemini Optical Design

The GeminiSEM family is based on more than 25 years experience on perfecting ZEISS Gemini electron optics. Count on efficient detection, excellent resolution and ease-of-use. The Gemini objective lens design combines electrostatic and magnetic fields to maximize optical performance while reducing field influences at the sample to a minimum. This enables excellent imaging, even on challenging samples such as magnetic materials. The Inlens detection concept ensures efficient signal detection by detecting secondary (SE) and backscattered (BSE) electrons in parallel. Inlens detectors are arranged on the optical axis, which reduces the need for realignment and thus minimizes time-to-image. Gemini beam booster technology guarantees small probe sizes and high signal-to-noise ratios, right down to very low accelerating voltages. It also minimizes system sensitivity to external stray fields by keeping the beam at high voltage throughout the column until its final deceleration.