The complete EM product range

EVO®
Future assured
SEM platform

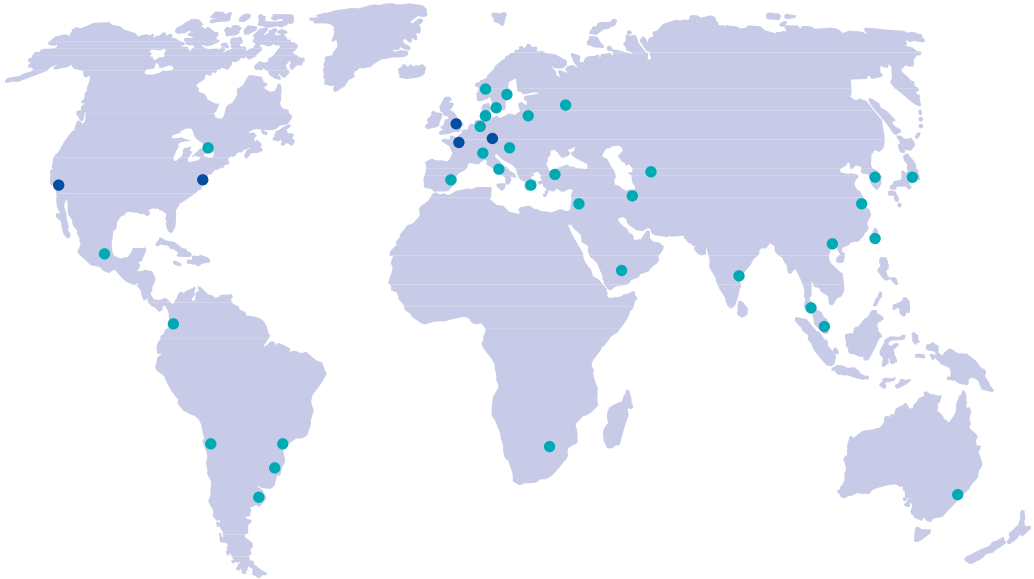
ULTRA
FESEM for
structural analysis

SUPRA™
Ultra high resolution
analytical FESEM

CrossBeam®
The ultimate
3D analysis tool

LIBRA®
EFTEM with In-column
OMEGA filter

Carl Zeiss SMT worldwide



- Carl Zeiss SMT
- Distributor

Global Solution Provider

The Nano Technology Systems Division of Carl Zeiss SMT provides its customers with total solutions featuring the latest leading-edge EM technology. The company's extensive know-how, meticulously acquired over 60 years in the field of E-beam technology, has brought many pioneering innovations to the market. Our global applications and service network guarantees fast, reliable and high quality support sharply focused on customer requirements. Combined with dedicated upgrade strategies, this will protect your investment for its entire lifetime. The core technology embedded in our innovative products enables us to provide solutions which add value to our customers' business.

Enabling the Nano-Age World®

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A Wide Range of Versatile Nano Technology Solutions

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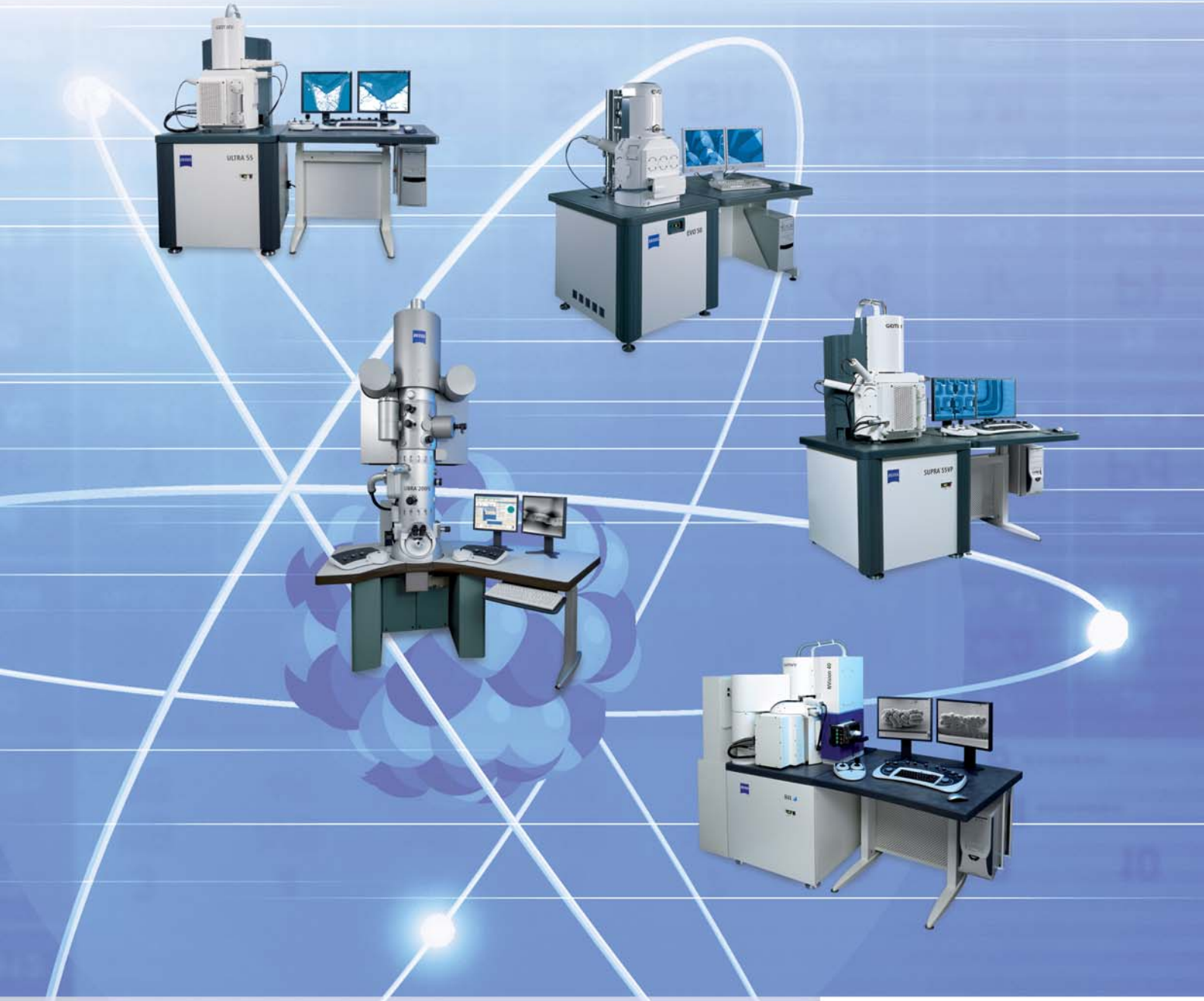


Enabling the Nano-Age World®

ZEISS

EVO® –

EVO® –

The new st

EVO® 40 – HV/XVP®/EP

Versatile SEM

andard in versatile imaging solutions

EVO® 50 – HV/XVP®/EP
Research grade analytical SEM platform

EVO® 60 – HV/XVP®/EP
Imaging solutions for
large specimens

The EVO® systems represent the latest developments in SEM technology. The new high resolution OptiBeam® multi mode column with the sharp conical objective lens enables superior imaging solutions for a wide range of applications and makes the EVO® the most effective analytical SEM currently available. The new **XVP®** (e**X**tended **V**ariable **P**ressure) capability now exceeds the limitations of other VP and LV instruments preventing dehydration damage in life science, pharmaceutical and geotechnology applications. The EP models offer pressures up to 3000 Pa enabling live imaging of dynamic processes. The ***future assured*** upgrade paths ensure that the EVO® series can develop over time with your applications.

- XVP® for non-conducting specimens
- Class leading X-ray and analytical geometry
- VPSE detector for secondary imaging in XVP®
- ***Future assured*** upgrade paths to meet new requirements
- BeamSleeve™ accurate analysis of non-conductors
- Dedicated EVO®50WDS and EVO®50 Raman systems

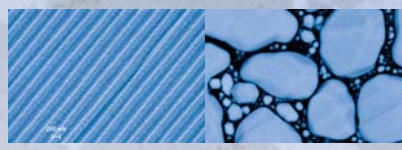
EVO® Series Essential Specifications	
Resolution	3.0 nm @ 30 kV (W) 2.0 nm @ 30 kV (LaB_6) 4.5 nm @ 30 kV (XVP® mode)
Acceleration Voltage	0.2 - 30 kV
Magnification	7 - 1,000,000 x
X-ray Parameters	8.5 mm WD / 35° TOA
OptiBeam® Modes	Analysis, Large Field, Resolution and Depth
XVP® Pressure Range	5 - 750 Pa with air or water (opt.)
EP Pressure Range	5 - 3000 Pa with air or water (opt.)
Image Processing	7 integration and averaging modes
System Control	Windows® XP based SmartSEM™

ULTRA – The ultimate imaging tool

The ULTRA FESEM, based on the SUPRA™ FESEM represents the ultimate nano structural analysis E-beam tool which delivers high efficiency, ultra high resolution imaging. The newly developed **E**nergy **s**elective **B**ackscattered (**EsB**) and **A**ngle **s**elective **B**ackscattered (**AsB**) detectors represent the latest developments of the renowned GEMINI® technology. The ULTRA incorporates the GEMINI® In-lens SE detector for crisp topographic imaging, the EsB detector for clear compositional contrast and the AsB detector for crystollagraphic information. Simultaneous real-time imaging and mixing of signals offers ultimate imaging capabilities. The EsB detector comprises a filtering grid which enables high resolution BSE imaging revealing previously unseen image details.

- Ultra high resolution SE and BSE imaging at low kV
- High efficiency EsB/AsB detectors for nano-scale compositional contrast
- Extra large motorised eucentric stages with precise control
- Real-time imaging and mixing of BSE and SE signals
- Suppresses charging effects on non-conducting specimens
- Ultra stable current mode for X-ray analysis and EBSD applications

ULTRA Essential Specifications	
Resolution	1.0 nm @ 15 kV 1.7 nm @ 1 kV 4.0 nm @ 0.1 kV
Acceleration Voltage	0.1 - 30 kV
Probe Current	4 pA - 20 nA
Magnification	12 - 900,000x
Electron Emitter	Thermal Field Emission
Standard Detectors	SE In-lens, EsB In-column AsB and ET chamber detector
Image Processing	7 integration and averaging modes
System Control	Windows® XP based SmartSEM™



ULTRA 55

Nano-scale compositional imaging

ULTRA 60

Imaging and metrology workstation

SUPRA™ – Comprehensive ultra high re

The SUPRA™ series comprises the 3rd generation improved GEMINI® column, new stage concepts, intelligent hardware control panel and the new high efficiency In-lens SE detector. With the SUPRA™ range Carl Zeiss SMT - Nano Technology Systems Division has brought the most versatile FESEM to the market. Ultra high resolution with superb image quality, easy change of operating voltage, excellent probe current stability, fully analytical specimen chambers and easy operation through the Windows® XP based SmartSEM™ control software are just a few of the out-standing features of this leading edge technology range of instruments. For applications in R&D, failure analysis or quality assurance the SUPRA™ FESEMs provide quick, reproducible and reliable results.

The wide range of SUPRA™ instruments provide comprehensive imaging solutions for demanding applications in semiconductor, materials analysis, pharmaceutical and life science applications. The proprietary VP technology with the enhanced VPSE detector enables superb imaging and analytical results for non-conducting specimens. The unmatched imaging capabilities of the GEMINI® column, especially below 1 kV operating voltage, makes the SUPRA™ the imaging tool for all nano-science applications.

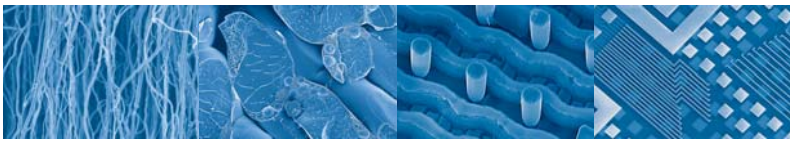
- Ultra high resolution over the entire voltage range
- Voltage range down to 0.1 kV with minimal adjustments required
- High probe current, ultra stability
- High efficiency In-lens SE detector for high contrast surface imaging
- Enhanced VPSE detector to image non-conducting specimens
- Ease of operation through Windows® XP based SmartSEM™ control software

SUPRA™ 40/40VP

The workhorse in the SUPRA™ range with large stage and VP mode, especially suited for failure analysis, process control and cryo applications

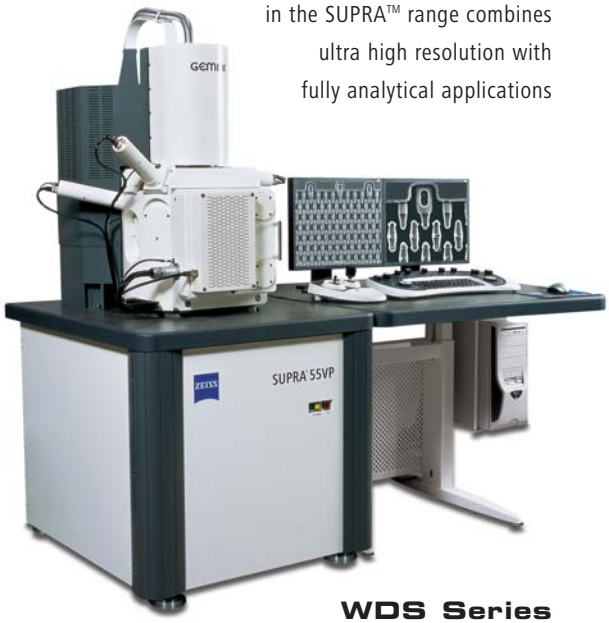
esolution and analytical solutions

SUPRA™ Essential Specifications	
Resolution SUPRA™ 40/40VP	1.3nm @ 15kV 2.1nm @ 1kV 5.0nm @ 0.1kV 2.0nm @ 30kV (VP mode)
Resolution SUPRA™ 55/55VP & 60/60VP	1.0nm @ 15kV 1.7nm @ 1kV 4.0nm @ 0.1kV 2.0nm @ 30kV (VP mode)
Acceleration Voltage	0.1 - 30kV
Probe Current	4pA - 10nA (20nA optional)
Magnification	12 - 900,000x
Electron Emitter	Thermal Field Emission
VP Vacuum	2 - 133Pa
Standard Detectors	SE In-lens and ET chamber detector VPSE detector for VP versions
Image Processing	7 integration and averaging modes
System Control	Windows®XP based SmartSEM™



SUPRA™ 55/55VP

The most versatile instrument in the SUPRA™ range combines ultra high resolution with fully analytical applications



WDS Series

Now available for SUPRA™ 55, SUPRA™ 55VP & ULTRA55

SUPRA™ 60/60VP

The large chamber with the 6" super eucentric stage and the 8" airlock is the perfect solution for full wafer analysis and for users who need to examine large specimens

CrossBeam® – The ultimate combination of FIB and GEMINI® column

The Carl Zeiss CrossBeam® line covers a complete range of unique instruments. Starting with the 1540XB dedicated to daily analytical work and sample preparation, the 1540EsB for highest demands in imaging and ending with the new NVision 40 workstation for highest demands in imaging and unparalleled ion beam performance.

The unique CrossBeam® line combines the unequalled imaging power of the proprietary GEMINI® field emission technology with the sophisticated high performance focussed ion beam column into one extraordinary powerful system. The superior eucentric stage, together with a sophisticated compact multi-channel gas injection system makes the CrossBeam® line the ultimate analysis and inspection tool. The unique live imaging capabilities over the entire magnification range during FIB operation give full control when working on critical samples. A range of options assures that every CrossBeam® workstation can be configured for demanding applications.

CrossBeam® 1540 EsB

The ultimate 3D research tool

NVision 40

The new 3D CrossBeam® workstation

- CrossBeam® operation: high resolution live imaging during milling and polishing
- Ultra high resolution imaging with GEMINI® column
- Extreme FIB precision
- Automated TEM preparation software package
- Enhanced compositional imaging with In-column EsB detector

CrossBeam® Essential Specifications		
	Electron Optics	**FIB**
Resolution	1.1nm @ 20kV 2.5nm @ 1kV	7nm @ 30kV
Acceleration Voltage	0.1 - 30kV	3 - 30kV
Probe Current	4pA - 10nA	1pA - 50nA
Magnification	12 - 900,000x	600 - 500,000x
Emitter	Thermal Field Emission	Ga LMIS
Standard Detectors	SE In-lens and ET chamber detector	
Image Processing	7 integration and averaging modes	
System Control	Windows®XP based SmartSEM™	

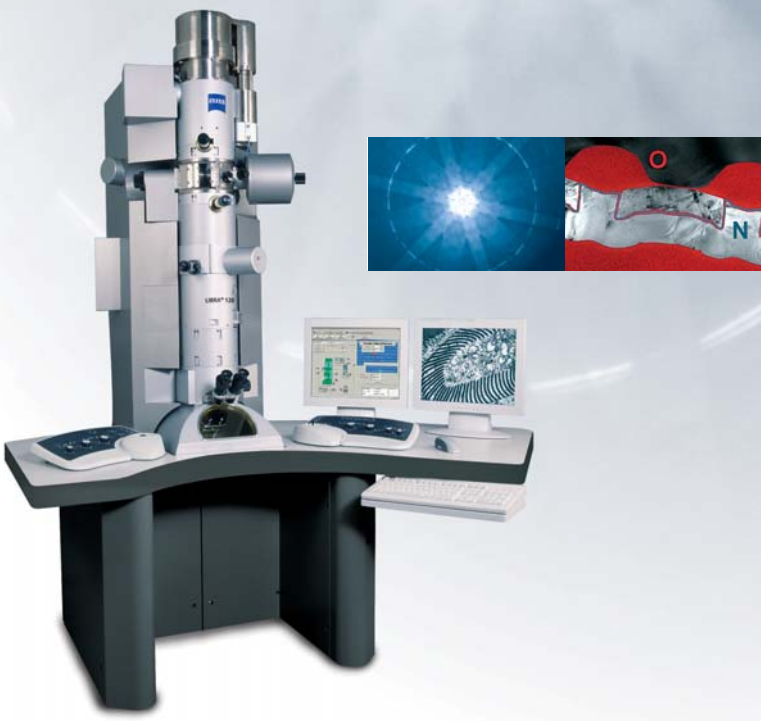
LIBRA® – EFTEMs with unique OMEGA energy filter

The LIBRA® EFTEM range with the unique In-column OMEGA energy filter concept and Koehler illumination comprises the LIBRA® 200FE and the LIBRA® 120. The LIBRA® 200FE combines the versatility of the unique In-column 2nd order corrected OMEGA energy filter with a high brightness field emission electron gun. The 2nd order corrected OMEGA energy filter allows unrivalled isochromatic specimen viewing areas and diffraction acceptance angles at sub-eV energy resolution. The LIBRA® 120 combines proven flexibility, improved dry vacuum system and Windows® based user interface to ensure maximum information content with ease of operation.

The combination of dedicated control panels and the WinTEM™ GUI gives maximum convenience and a consistent look-and-feel operation across the entire product range.

- EFTEM with unique In-column OMEGA energy filter and Koehler illumination
- LIBRA® 200FE EFTEM with 2nd order corrected OMEGA filter
- LIBRA® 120 LaB_6 or W emitter
- Dry differential vacuum system
- Sub-ppm stability
- Windows® XP based WinTEM™ graphical user interface

LIBRA® Essential Specifications		
	LIBRA® 120	**LIBRA® 200FE**
Imaging Resolution	0.34 nm	0.24 nm
Energy Resolution	<1.5 eV	<0.7 eV
Acceleration Voltage	80 and 120 kV	120 and 200 kV
Magnification	8 - 630,000x	8 - 1,000,000x
Electron Emitter	Lab_6 or W	Thermal FE
Illumination System	Koehler	
Vacuum System	Completely oil-free	
System Control	Windows® XP based WinTEM™	



LIBRA® 120

Excellent image contrast and superb analysis

LIBRA® 200FE

Comprehensive results with maximum data