VEGA\\

	SBH	SBU		
Resolution In high vacuum mode (SE) In medium, low vacuum mode (BSE)	 3.0 nm at 30 kV –	 3.0 nm at 30 kV 3.5 nm at 30 kV		
Working vacuum High vacuum mode Medium vacuum mode Low vacuum mode	 < 1 x 10^{-2} Pa – –	 < 1 x 10^{-2} Pa 3 – 150 Pa 3 – 500 Pa (optionally 2000 Pa)		
Electron optics working modes	Resolution, Depth, Wide Field, Field, Rocking Beam	**High Vacuum** Resolution, Depth, Wide Field, Field, Rocking beam	**Medium Vacuum** Resolution, Depth, Wide Field, Field, Rocking beam	**Low Vacuum** Resolution Depth
Magnification	Continuous from 6x to 1,000,000x			24x - 1,000,000x
Accelerating voltage	200 V to 30 kV			
Electron gun	Tungsten heated cathode			
Probe current	1 pA to 2 μA			
Scanning speed	From 200 ns to 10 ms per pixel adjustable in steps or continuously			
Focus window	Shape, size and position continuously adjustable			
Scanning features	Dynamic focus, Point & Line scan, Tilt correction, 3D Beam			
Image size	Up to 8,192 x 8,192 pixels in 16-bit quality, size is adjustable separately for live images (in four steps) and for saved images (in 10 steps), for square and rectangular 4:3 or 2:1 image shapes.			
Microscope control	All microscope functions are PC controlled by means of the trackball, the mouse and the keyboard via the VegaTC program using Windows™ platforms			
Automatic procedures	Vacuum Control, Filament Heating, Gun Alignment, Centering of Scanning modes, Compensation for kV, Probe Current optimized for Spot Size, Spot Size optimized for Magnification, Scanning Speed, Contrast & Brightness, Focus & Stigmator, Look up Table			
Remote control	Via TCP / IP			

Requirements

Installation requirements	Power 230 V/50 Hz or 120 V/60 Hz, 1300 VA. No water cooling. Compressed dry nitrogen is recommended: 150 – 500 kPa
Environmental requirements	Temperature of environment: 18 – 28 °C Relative humidity: max. 80 % Vibrations: Passive isolation: < 4 μm/s below 30 Hz; < 8 μm/s above 30 Hz Background magnetic field: synchronous max. 3 x 10^{-7} T asynchronous max. 1 x 10^{-7} T System dimension: 2.15 m x 1.075 m Room for installation: min. 3 m x 3 m

Software	SBH	SBU
Measurement	●	●
Image Operation	●	●
Image Processing	●	●
3D Scanning	●	●
Hardness	●	●
Multi Image Calibrator	●	●
Object Area	●	●
Print Magnification	●	●
Switch-Off Timer	●	●
Tolerance	●	●
Morphology	○	○
Sample Observer	○	○
Mouse Link	○	○

● standard, ○ option

TESCAN
PERFORMANCE IN NANOSPACE

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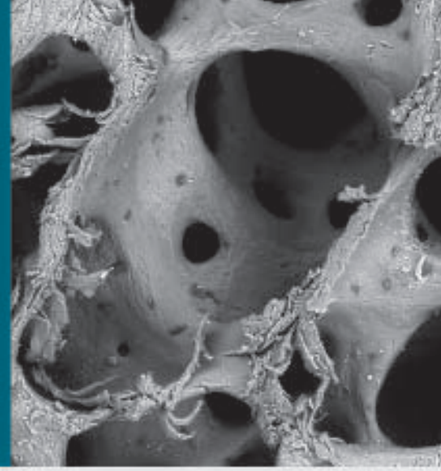
Distributor

VEGA\\ SB



Analytical Scanning Electron Microscope with a Small Chamber and a Manual Stage

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VEGA\\ SB

The VEGA\\ SB belongs the Vega series of Tungsten heated cathode SEMs. With its excellent optical qualities and within easy reach it is suitable for education purposes as well as industrial applications where small samples are investigated.

Features of Vega SEM series

- A unique four-lens **Wide Field Optics**™ design offering the variety of working and displaying modes embodying the Tescan proprietary Intermediate Lens for the beam aperture optimization
- A comprehensive choice of detectors and accessories
- A fast and easy obtaining of the a clean chamber vacuum by powerful turbomolecular and rotary fore vacuum pumps
- Network operations and built-in remote access/diagnostics, all come as a Tescan standard

Features of VEGA\\ SB chamber model

- 8 chamber interface ports
- Optimized analytical geometry allowing simultaneous EDX and EBSD analysis
- An eucentric stage with manual movements
- A favorable price to performance ratio makes VEGA\\ SB models easily available

VEGA\\ SBH

A small chamber model with a manual eucentric manipulator operating at high vacuum suitable for applications where small samples are investigated.

VEGA\\ SBU

A variable pressure SEM that supplements all the advantages of the high vacuum model with extended facility for low vacuum operations, allowing for investigation of nonconductive specimens in their natural, uncoated state.

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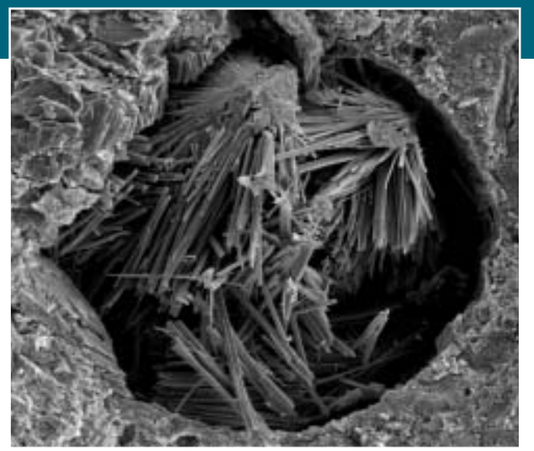
Chamber SB

Internal size	∅ 160 mm
Door width	120 mm
Number of ports	8
Chamber suspension	mechanic

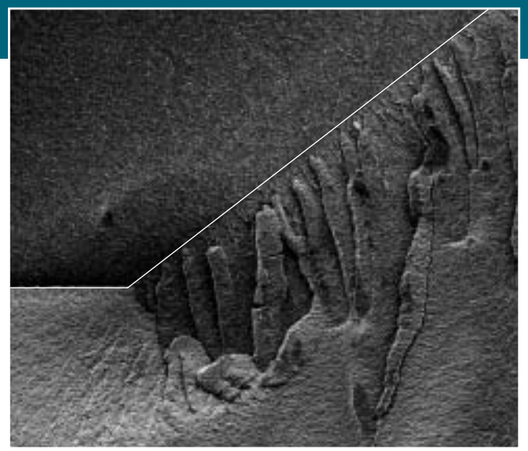
Specimen stage

Type	eucentric
Movements	X = 40 mm – manual Y = 24 mm – manual Z = 27 mm – manual Z' = 6 mm – manual Rotation: 360° continuous – manual Tilt: -90° to + 90° eucentrically – manual Option: Motorized XYR movements
Specimen height	maximum 30 mm

Application in building industry: Investigation of concrete aging.

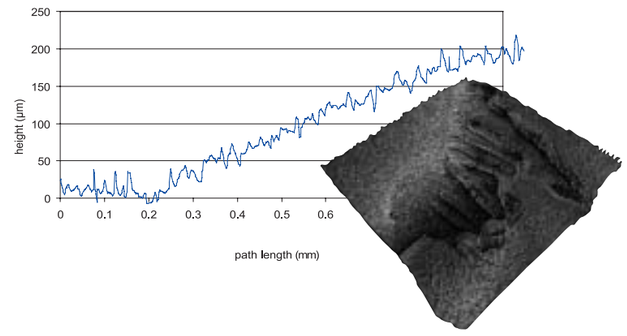


Industrial application: Cutter tool fatigue fracture initiation point.



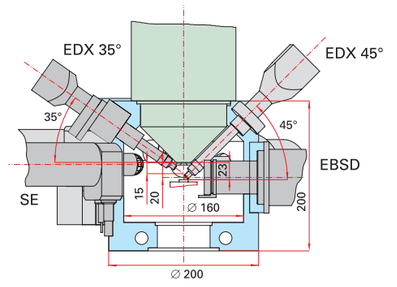
An appropriate choice of detectors makes VEGA\\ SB microscope a versatile analytical tool for routine applications.

Fig. Real profile reconstructed from 3D model by MeX® software.

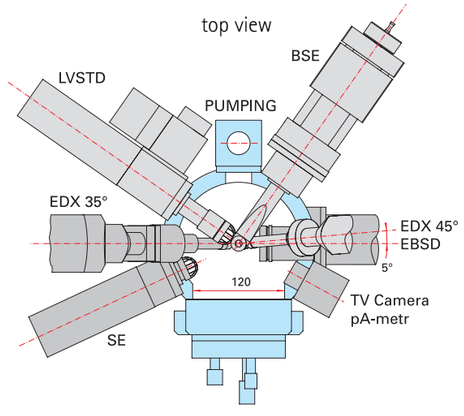


Beam tilt enables stereo imaging for 3D model reconstruction by MeX® software.

front view



top view



Detectors	SBH	SBU
SE – ET type detector	●	●
Fixed BSE detector	○	-
Retractable BSE detector	○	●
LVSTD	-	○
TE detector	○	○
EBIC	○	○
CL detector	○	○
EDX *	○	○
EBSD *	○	○

Accessories		
Probe current measurement	●	●
Touch alarm	●	●
Chamber view camera	○	○
Beam blanker	○	○

* fully integrated third party products
● standard, ○ option