

VEGA

LMH

LMU

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, Field, Wide Field, Rocking Beam	High Vacuum Resolution, Depth, Field, Wide Field, Rocking beam	Medium Vacuum Resolution, Depth, Field, Wide Field, Rocking beam	Low Vacuum Resolution Depth
Magnification	Continuous from 4x to 1,000,000x			13x - 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 Compressed air for suspension: 450 – 600 kPa
Environmental requirements	Temperature of environment: 18 – 28 °C Relative humidity: max. 80 % Vibrations: Passive isolation: < 6 μm/s below 30 Hz; < 12 μm/s above 30 Hz Active isolation (option): < 12 μm/s below 30 Hz; < 24 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

	LMH	LMU
Measurement	●	●
Image Operation	●	●
Image Processing	●	●
3D Scanning	●	●
Hardness	●	●
Multi Image Calibrator	●	●
Object Area	●	●
Print Magnification	●	●
Switch-Off Timer	●	●
Tolerance	●	●
Morphology	○	○
Particle Analysis	○	○
Image Snapper	○	○
Sample Observer	○	○
Mouse Link	○	○

● standard, ○ option

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We are constantly improving the performance of our products, so all specifications are subject to change without notice.



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VEGA LM



Analytical Scanning Electron Microscope with a Large Chamber and an Extended Motorized Stage

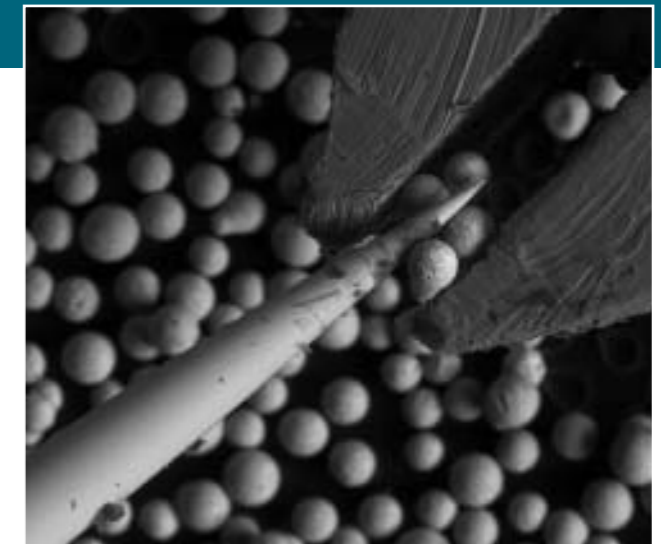


VEGA\\LM

The VEGA\\LM belongs to the Vega series of Tungsten heated cathode SEMs. With its large chamber and optimized port geometry it is suitable for applications where large samples are investigated and great analytical potential is needed.

Application in life science: Chamomile's anther with pollen grains. An uncoated sample was placed on a Peltier cooling stage to avoid evaporation.

Application in nanotechnology: Easy navigation of various nanomanipulators.



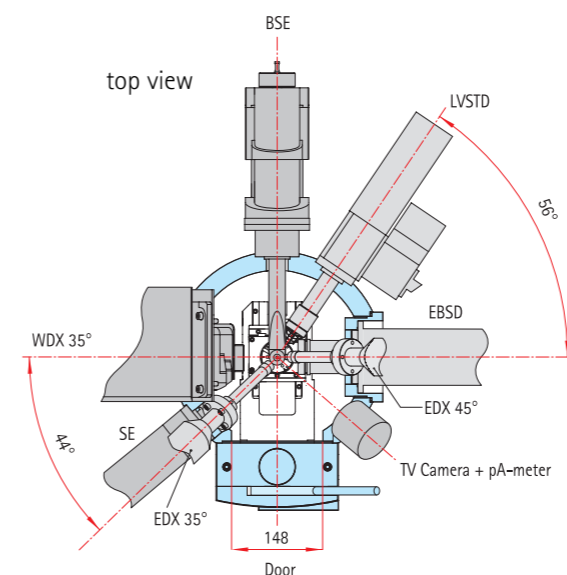
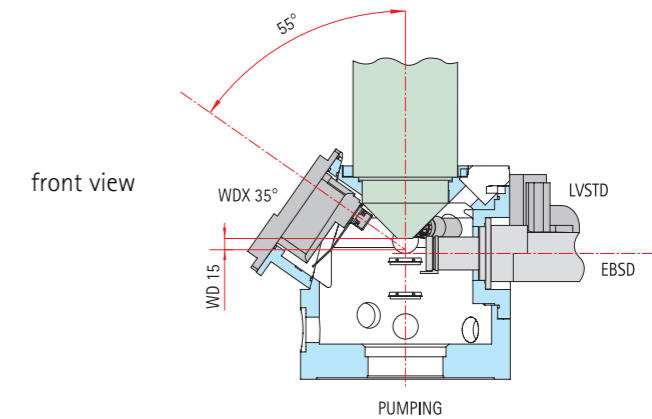
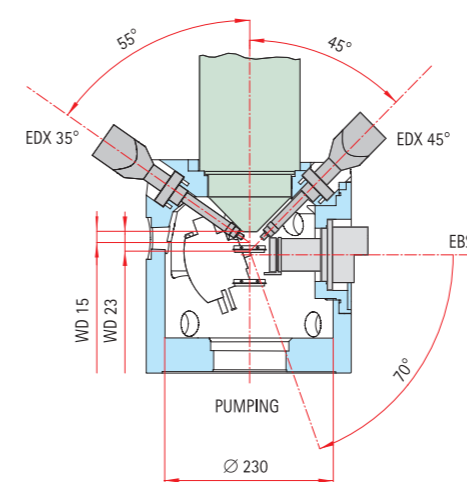
Features of Vega SEM series

- 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
- Comprehensive choice of detectors and accessories
- Fast and easy obtaining of the 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 LM chamber model

- A large chamber with extended 5 axes motorized compucentric stage
- 11 chamber interface ports with optimized analytical geometry for EDX, WDX and EBSD
- Accurate and reliable automated analysis utilising fast and precise computer-controlled stage
- A pneumatic or optional active vibration isolation ensures reducing the influence of ambient vibration
- Optimum price to quality solution even for exacting users

A large variety of possible detectors makes VEGA\\LM microscope an extremely versatile analytical tool.



Detectors

	LMH	LMU
SE – ET type detector	●	●
Fixed BSE detector	○	-
Retractable BSE detector	○	●
LVSTD	-	○
TE detector	○	○
EBIC	○	○
CL detector	○	○
EDX *	○	○
WDX *	○	○
EBSD *	○	○

Accessories

	LMH	LMU
Probe current measurement	●	●
Touch alarm	●	●
Chamber view camera	●	●
Peltier cooling stage	○	○
Beam blanker	○	○
Nanomanipulators *	○	○

* fully integrated third party products
● standard, ○ option



VEGA\\LMH

Large chamber model with extended motorized manipulator operating at high vacuum suitable for wide range of technical applications where conductive materials are investigated.

VEGA\\LMU

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

Chamber LM

Internal size	Ø 230 mm
Door width	148 mm
Number of ports	11
Chamber suspension	pneumatic or optionally active vibration isolation

Specimen stage

Type	compucentric
Movements	Fully motorized: X = 80 mm, Y = 60 mm, Z = 47 mm Rotation: 360° continuous Tilt: -75° to + 50° *
Specimen height	maximum 60 mm

* from WD 15 mm and for the eucentric height of the specimen

