

Performance	
Resolution	0.8 nm at 30 kV (STEM mode) 1.0 nm at 15 kV at WD = 2 mm 1.7 nm at 1 kV at WD = 2 mm 3.5 nm at 0.2 kV at WD = 2 mm 4.0 nm at 0.1 kV at WD = 2 mm
Acceleration voltage	0.02 V - 30 kV Continuously variable in 10 Volt steps.
Probe current	4 pA - 20 nA with integrated High Current - Depth of Field module
Magnification	12 - 1.000.000x (SE) 100 - 1.000.000x (BSE)
Others	Extended probe current range
	OptiProbe: Probe current is continuously adjustable by software control

Electron optics	
Electron source	Schottky field emitter
Lens control	Patented GEMINI [®] electromagnetic/electrostatic objective lens system with water cooling for best thermal stability and reproducibility
Stigmator	Eight pole electromagnetic
Apertures	Six apertures with electromagnetic selection. Sizes: 7.5 µm, 10 µm, 20 µm, 30 µm, 60 µm, 120 µm
Beam shift	Width: 15 µm at 20 kV and WD = 8.5 mm Extended beam shift width: 200 µm 20 kV and WD = 8.5 mm

Specimen chamber and stage		
Specimen chamber	Dimensions	330 mm inner diameter 270 mm height
Specimen stage	Type (standard)	5-axes motorised eucentric, controlled via SmartSEM [®] software Other stage types optionally available.
	Specimen weight	Up to 0.5 kg
	Movement	X/Y = 130 mm Z = 50 mm T = -3 to 70° R = 360° continuous

Detectors

In-lens detector	High efficiency annular scintillator detector mounted in GEMINI® column with optically coupled photomultiplier.
EsB® detector	Column-mounted high efficiency scintillator detector with optically coupled photomultiplier for detection of energy and angle selective backscattered electrons. Filtering grid adjustable from 0 V to -1.5 kV for contrast adjustment.
AsB® detector	10 mm ² four-quadrant solid state BSD diode integrated in the GEMINI® objective lens for the detection of angle selective back-scattered (AsB) electrons. The 4-diode quadrants are independently controlled via a dedicated menu allowing the user to define the topographical and compositional response of the detector.
Chamber detectors	a) Everhart-Thornley detector with optically coupled photomultiplier b) CCD-camera with infrared illumination

Charge compensator

Type	Local dry nitrogen gas injection
Integration	Pneumatically retractable und insertable gas injection system
Adjustment	Fully software-controlled operation, adjustable from 0 % to 100 %
Interlocks	Hardware and software interlocks to avoid interferences with stage and other interlocked detectors.