Technical Specifications
Scanning Electron Microscope (SEM)

S. No	Item	Specifications
1	Resolution	• 2.0 nm at 30 kV or better in High Vacuum mode • 6.0 nm at 3 kV or better in High Vacuum mode • 9.0 nm at 1 kV or better in High Vacuum mode • 3.0 nm at 30 kV or better in Low Vacuum mode
2	Magnification	• 10x to 8,00,000x - continuously variable
3	Accelerating Voltage	• 0.2 kV to 30 kV, with incremental step of 10 volts for the entire range
4	Probe Current	• Up to 3 μA or more – continuously variable
5	Electron Gun and Optics	• LaB6 or W
6	Vacuum and Imaging Modes	• High Vacuum mode for conductive or coated specimens. • Extended environmental mode enabling stable imaging up to ~3000 Pa to handle non-conductive, hydrated, or outgassing samples.
7	Detectors	• Secondary electron detector (ETSE) for high vacuum imaging • Back Scattered Electron Detector • Internal digital chamber camera • EDS detector • C2DX for VP Mode
8	Specimen Stage	5-axes Fully Motorized Stage with movement facility with: ○ X = 90 mm or higher ○ Y = 90 mm or higher ○ Z = 50 mm or higher ○ Tilt = –10° to +90° ○ Rotation = 360° - continuous
9	Specimen Chamber	• Maximum Sample size: 200 mm in diameter or better. • Maximum Sample height: 100 mm or better.
10	Software Ability	• Data acquisition and analysis • Automatic calibration of magnification and beam alignment • Automatic calibration of EDS • Drift-control system • On screen recording (video and image) • Auto as well as manual focusing, and aberration correction (AI enhanced), Auto and manual brightness and Contrast correction; Auto Gun alignment; Auto Beam alignment; • Micrograph analysis for identifying various features of micrograph • 3D viewing/ surface modelling