

Electron Optics

ZrO/W Schottky Emission Electron Gun.

Accelerating voltage: 0.5 to 30 kV (0.1 kV step), Irradiation/Landing Voltage: 0.1 to 2.0 kV with deceleration mode

Probe Current: max 200nA for both HV and VP Modes

Beam Deceleration Function with In-Column Top Detector

Spatial Resolution

SE Resolution: 1.2 nm at 30 kV, WD=5mm, Mag. 180kx
3.0 nm at 1 kV, WD=3mm. Mag. 80kx
2.0 nm at 1 kV, WD=3mm, Mag. 120kx with deceleration mode
3.0 nm at 15 kV Variable Pressure mode
BSE Resolution: 3.0nm (15kV, WD=5mm, VP 10Pa)

Magnification

Photograph magnification = 10-600,000 times (based on 4"x5" picture)

Monitor display magnification = 18-1,000,000 times (800x600 pixels)
30-1,500,000 (1280x960 pixels)

Variable Pressure Mode

Pressure Range: 10 to 300 Pa (Air)

Secondary Electron Detector

Evehart-Thonley SE detector (Low detector)

Top detector combined to deceleration function

Ultra Variable-Pressure Detector (UVD)--low vacuum secondary electron detector

UVD modified to perform as CL detector

Backscattered Electron Detector

Retractable five segment low impedance Backscatter Electron Detector

Stage

5 axis motor-drive stage: X: 0-100 mm; Y: 0-50mm, Z: 3-65 mm;

T: -20/+90 deg; R: 360 deg

A "draw out" specimen chamber that is compatible with large specimens (~ 200 mm ϕ , ~ 80 mmH)

Rapid sample exchange; evacuation to observation in 3 minutes or less.

EDS

Oxford Silicon Drift Detector (SDD) X-MAX 80mm² with 124eV energy resolution

EBSD

EBSD HKL Advanced with a NordlysMax3 camera and forescatter detector with 4 diodes for

NordlysNano.

Vacuum System

TMP Vacuum system without water recirculation required.

Compressor

Ulvac dry scroll pump assembly

Others

Infrared Chamber Scope

Hitachi NaviCAM Navigation Camera.

Connected with Renishaw SCA unit

Software

EM Wizard

AZTEC for Oxford EDS and EBSD: Analyser, Point&ID, Mapping, Linescan, Standardisation Manager, AutoLayer, TruMap, AutoLock, AutoPhaseMap, QuantMap, QuanlineScan; PhaseID, EBSD Mapping, Integrated Mapping ReAnalysis, AZtect TruPhase, Large Area Mapping, MapQueue

CHANNELS5 Geological Phase Database