

IFE's Scanning Electron Microscope (SEM)

IFE's scanning electron microscope (SEM) is an ultra-high resolution Hitachi S-4800. It has a Noran System Six energy dispersive spectrometer (EDS) for element analysis.

Specifications Hitachi S-4800



The Hitachi S-4800 is a conventional semi-in-lens design for large sample accommodation while achieving ultra-high resolution (UHR) comparable to performance only available with in-lens UHR SEMs.

Specifications

Secondary electron image resolution	1.0 nm (at 15 kV) 2.0 nm (at 1 kV)
Backscattered electron image resolution	3.0 nm guaranteed (at 15 kV YAG detector)
Electron optics	Electron gun
Cold field emission electron source Acc. voltage	0.5 ~30 kV (variable at 0.1 kV/step)
Magnification	x 30 ~x 800,000
Detectors	Secondary electron detector (upper/lower/upper + lower), YAG BSE detector Transmitted electron detector Energy dispersive X-ray detector
Specimen stage	PC-controlled 5 axis motor drive Traverse X: 0-110 mm Y: 0-110 mm Z: 1.5-40 mm R: 0-360 ° T: -5~+70 degrees (depends on Z)
Frame memory	640 x 480 pixels, 1,280 x 960 pixels, 2,560 x 1,920 pixels, 5,120 x 3,840 pixels
Image file format	BMP, TIFF, JPEG selectable

Specifications Noran System Six Element Analysis



Liquid Nitrogen Cooled X-ray Detector

- * Crystal area 30mm²
- * Mn resolution 134 eV
- * F resolution 65 eV
- * Light element detection down to Beryllium

Noran System Six Software Features

- * Data is stored in industry standard formats
- * Peaks automatically identified during acquisitions and on-the-fly during analyses
- * Standard microanalysis tools—spectral analysis, image and x-ray maps, linescans, qualitative and quantitative analysis
- * Accurate automatic peak identification
- * Automatic quantitative analysis with PROZA matrix correction routine
- * Qualitative X-ray mapping and linescans
- * Electron image acquisition
- * Automated Point-and-Shoot mode
- * Spectral Imaging
- * Feature sizing with chemical typing option (read more)
- * COMPASS Automated Statistical Analysis
 - Quickly generating “pure” component maps with single-pixel intensity
 - Even a single distinct pixel in the data set is detectable
 - Unparalleled solution for needle-in-a-haystack problems
- * Drift Compensation option for long or high magnification acquisitions