

<b><i>Equipment Description</i></b>	
Attribute	Description
Equipment Manufacturer (OEM)	Hitachi
Tool Model	S5000H
Tool Description	Scanning Electron Microscope (SEM)
Date of Manufacture	Early 1990's
Entity Code / CEID (if applicable)	SEM02
Sample type (wafer, solid, gas, liquid)	Wafer/Solids
Sample dimensions	4x6mm max – x-section or flat down
Vendor Serial #	6920-02
Operating System and Software Version	Non PC based
Location	SC9-135 Electron Microscopy Lab
Operational Status (fully functional, repairs needed, any cannibalization)	Fully Operational
Electrical Power Configuration (voltage, phase, current)	208V, single phase, 35A stepped down through transformer to 100V
Benchtop or standalone?	Stand alone
<b>Sample Loading Configuration (load-lock, robot, liquid sample introduction system, etc.)</b>	Manual load-lock, single sample load

Short Paragraph describing this tool, include key features, equipment options, configuration, diagrams etc.:

**Ultra-high resolution scanning electron microscope (UHRSEM) – cold cathode field emission (CCFESEM)**

**Resolution Spec for Secondary Electron imaging (SE) – 0.6nm @ 30keV and 3.0nm @ 1keV**

**Immersion lens system with high performance TEM sample stage**

**Fully dry pumped vacuum system: Seiko Mag Lev Turbo, Ion Pumps x 3, Scroll pumps x 2**

**Digital image capture system, also includes high resolution photo CRT with camera**

<b><i>Space and Facilities Requirements</i></b>		
Module or Component	Dimensions (Length x width x depth; add height, if tall tool)	Utilities (electrical power configuration: voltage, phase, current; CDA, N2, gases, PCW, UPW, liquid nitrogen, etc.)
Main Console combined with vacuum station/electron column	80" wide, 41" depth Column height 70"	208V single phase, 35A stepped down to 100V CDA @ 60PSI for pneumatics N2 @ 10 PSI for purge LN2 for anti-contamination cold finger
Air Cooled chiller – closed loop	18" wide, 27" depth	110V, 20A

Power Rack	24" wide, 30" depth 62" height	208V main power stepped down to 100V through rack and out to system
PCI Image Capture Ver. 6 (PC with image capture board)	Stand alone on computer table, 24" wide, 30" depth	110V
<b>Edwards Scroll Pumps (2)</b>	42" wide, 18" depth	Receives power from main unit

<i>System Configuration</i>		
	Modules / Features / Tool Options / Chillers / Pumps	Qty
1	Main Unit – Console and electron column/vacuum station	1
2	STEM Detector with Bright Field Aperture	1
3	PCI – Digital Image Capture PC	1
4	Haskris Air Cooled Chiller	1
5	Various Sample holders, Bulk, X-section, x-section double tilt, STEM	1 ea
6	Power rack	1
7	Scroll/roughing pumps	2





Chiller



PCI – Digital Image Capture

" This equipment complies with the requirements in Part 15 of FCC Rules for a Class A computing device. Operation of this equipment in a residential area may cause unacceptable interference to radio and TV reception requiring the operator to take whatever steps are necessary to correct the interference. "

 SCANNING ELECTRON MICROSCOPE  
TYPE S-5000H  
PAT.NO. \_\_\_\_\_  
CAT.NO. \_\_\_\_\_  
MFG.NO. 6920-02 DATE \_\_\_\_\_

**Hitachi, Ltd. Tokyo Japan**  
MADE IN JAPAN 5333884

LICENCED UNDER ONE OR MORE OF  
THE FOLLOWING U.S. PATENTS

4,942,516	4,121,284	4,371,923
4,686,622	4,825,364	4,896,260
4,954,951	4,531,182	4,120,583
4,396,976	4,829,419	



Scroll/roughing pumps