CONFIGURATION SHEET

Hitachi S-4800 Field Emition Scanning Electron Microscope

Model	S-4800	Serial N0		Vintage	2004
Main Unit	TIP	Hitachi FE Tip (Vext 4.8)			
	IonPump	Barion Ion Pump (4 ea)			
	Turbo Pump	BOC Edward STP 301H			
	Stage	Type 2 (5 Axis Moter) Software Ver. 5.07 - MAX 150mm Diameter			
	SE Detector	Uper Detector , Lower Detector(2ea)			
	Ion Pump Power	Hitachi electron			
	Option	CD Measurement Function			
Display Unit	Monitor	19" LED Monitor			
	Control PC	HP d530 CMT			
	Stage Move	Joy Stic Control			
	Control Panel	Hitachi Standard Control Panel			
	Key Board	HP 101 Key Board(English)			
	Mouse	Microsft			
	SoftWare Version	Ver. 02-02			
	OS	Window XP			
Utility	PUMP	EDWARD ESDP13			
	Down Trans	Auto Tranformer (Type: 4F500-548) Cap. 7Kva			
	weight	1 Pumping hose type			
	Chiller	1 ea			

SPECIFICATION

Specifications for Hitachi Model S-4800, Field Emission Scanning Electron Microscope	
1. Resolution:	Accelerating voltage 15 kV Working distance = 4 mm ..... 1.0 nm Accelerating voltage 1 kV Working distance = 1.5 mm ..... 2.0 nm
2. Magnification:	High magnification mode .....100× to 800,000× Low magnification mode .....30× to 2,000×
3. Electron Optics:	(1) Electron gun ..... Cold cathode field emission type (2) Extracting voltage (Vext) ..... 0 to 6.5 kV (3) Accelerating voltage (Vacc)..... 0.5 to 30 kV (in 100 V steps) (4) Lens..... 3-stage electromagnetic lens, reduction type (5) Objective lens aperture..... Movable aperture (4 openings selectable/ alignable outside column). Self-cleaning thin aperture (6) Astigmatism correction coil (stigmator) .....Electromagnetic type (7) Scanning coil ..... 2-stage electromagnetic-deflection type
4. Specimen Stage	Motion Model S-4800, Type I: X Traverse 0 to 50mm (continuous); Y Traverse 0 to 50mm (continuous); Z Traverse 1.5 to 30.0mm (continuous); Tilt -5° to +70°; Rotation 360° (continuous) S-4800 Type II: 0 to 110mm (continuous); 0 to 110mm (continuous); 1.5 to 40.0mm(continuous); Tilt -5 ° to +70 °; Rotation 360 ° Specimen size Max. 100 mm (diameter) (airlock type specimen exchange) Max. 150 mm (diameter) (airlock type specimen exchange)
5. Display Unit	(1) Display type .....Flicker- free image on PC monitor (full scanning speeds) (2) Viewing monitor .....Type 18.1 LCD (Type 21 Color CRT: Option) (1280 × 1024 pixels) (3) Photo CRT (Option).....Ultra-high resolution type (effective field of view 120 × 90 mm) (4) Scanning modes.....Normal scan, Reduced area scan,line scan, Sport analysis,Average concentration analysis, Split/Dual magnification, (5) Scanning speeds.....TV (640×480 pixels display : 25 / 30 flames/s) Fast (Full screen display : 25 / 30 flames/s) Slow (Full screen display : 1/0.9, 4/3.3, 20/16, 40/32, 80/64 s/flame) (640×480 pixels display : 0.5/0.4, 2/1.7, 10/8, 20/16, 40/32 s/flame) For Photograph (2560×1920 pixels display : 40/32, 80/64, 160/128, 320/256 s/flame) Value of (50 Hz)/(60 Hz) TV : NTSC or PAL signal (6) Signal processing modes .....Automatic brightness control, Gamma control,Automatic Focus,Automatic Stigmator (7) Automatic data display .....Image number, accelerating voltage, magnificati micron bar, micron value, date/time and working distance can be printed on the film. (8) Data entry .....Alphanumeric characters, numbers, and marks be written on the image from the keyboard. (9) Electrical image shift.....±12 µm (WD = 8 mm)
6. Evacuation System	(1) System type.....Fully automatic pneumatic-valve system (2) Ultimate vacuum levels.....Specimen chamber : 7 × 10-4 Pa Electron gun chamber : IP-1 1 × 10-7 Pa or better IP-2 2 × 10-6 Pa or better IP-3 7 × 10-5 Pa or better (3) Vacuum pumps.....Electron optical system : 3 ion pumps Specimen chamber : Turbo molecular pump 1 oil rotary pump should be provided by user. (4) Compressor .....Oil-less type compressor should be provided by
7. Protection Devices	Warning devices .....Power failure, Cooling-water interruption, Inad vacuum