





Compare SEM with FE-SEM

SU3800 / SU5000 / SU7000 / Regulus 8100

HITACHI
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Model	Scanning Electron Microscopes SU3800 	Schottky Field Emission Scanning Electron Microscope SU5000 	Ultra-High-Resolution Schottky Scanning Electron Microscope SU7000 	Ultra-high Resolution Scanning Electron Microscope Regulus 8100 
Magnification	5x - 300,000x (on photo) 7x - 800,000x (on display)	×10 - ×600,000 (on photo) ×18 - ×1,000,000 (on display)	×20 - ×2,000,000	×20 - ×1,000,000
Resolution	3.0 nm at 30 kV (SE, High Voltage, High Vacuum)	1.2 nm at 30 kV (SE) 3.0 nm at 1 kV (SE)	0.8 nm at 15 kV (SE)	0.7 nm at 15 kV (SE)
	15.0 nm at 1 kV (SE, Low Voltage, High Vacuum)	2.0 nm at 1 kV (SE) with deceleration* 1.6 nm at 1 kV (SE) with EX deceleration*	0.9 nm at 1 kV (SE)	0.8 nm at 1 kV (SE)
	4.0 nm at 30 kV (BSE, High Voltage, Low Vacuum)	3.0 nm at 15 kV (BSE, variable pressure mode*)		
Electron source	Pre-centered cartridge type tungsten hairpin filament	ZrO / W Schottky emitter		Cold cathode field emitter
Accelerating voltage	0.3 - 30 kV	0.5 - 30 kV	0.1 - 30 kV	0.5 - 30 kV
Landing voltage		0.1 - 20 kV*	0.01-7 kV	0.1 - 20 kV
Variable pressure	6 - 650 Pa	10 - 300 Pa*	5 - 300 Pa*	
Sample stage traverse	5-axis motorized stage			3 or 5 -axis motorized stage*
	X : 0 - 100 mm		X : 0 - 135 mm	X : 0 - 50 mm
	Y : 0 - 50 mm		Y : 0 - 100 mm	Y : 0 - 50 mm
	Z : 5 - 65 mm	Z : 3 - 65 mm	Z : 1.5 - 40 mm	Z : 1.5 - 30 mm
	T : -20 - 90°		T : -5 - 70°	T : -5 - 70°
	R : 360°		R : 360°	
Maximum sample size	200 mm (in diameter)			100 mm (in diameter)
Maximum sample thickness	80 mm			17 mm
Signal detector	SE detector		Upper detector (UD)	Upper detector (with SE/BSE signal mixing function)
	High sensitive semiconductor BSE detector	Top detector*	Middle detector (MD)	Lower detector (LD)
	Ultra Variable-pressure Detector (UVD)*		Lower detector (LD)	BSE detector*
		Ultra Variable-pressure Detector (UVD)*		TE detector*
		TE detector*		
	Semiconductor type BSE detector (PD-BSED)*			
Analysis system	Energy dispersive X-ray spectrometry (EDS)*			
	Wavelength Dispersive X-ray Spectrometer (WDS)*			
	Electron Backscatter Diffraction (EBSD)*			