

HITACHI S-4500 SPECIFICATION



SYSTEM PERFORMANCE / SPEC

DESC			Specification
PERFORMANCE	Image resolution	at 15KV at 1KV	1.5nm with a test specimen 4 nm with a test specimen
	Accel voltage Magnification		0.5~30 KV x 20 ~ x 500,000
SAMPLE STAGE	Movement	X Y Z Tilt Rotation	0 ~ 25 mm 0 ~ 25 mm 1.5 ~ 26.5 mm -5 ~ + 45' eucentric tilt 360'
	Sample size Sample holder Sample exchange Stage drive	 Drive Control	100 mm (max) For 100mm wafer Airlock type (160mm wafer exchangeable) X/Y are motor drive Z/T/R manual drive Manual control by joystick
ELECTRON OPTICS	Electron gun Accel voltage (Vo) Lens system		Cold field emission source 0.5 ~ 30 KV 3-stage electromagnetic lens
	Objective aperture Stigmator Scanning coil		4-openings, selectable & alignable from outside the vacuum Electromagnetic octapole type 2-stage electromagnetic

SYSTEM CONSOLE / VACUUM

DESC			Specification
DISPLAY SYSTEM	Imaging signal		Secondary electron image Backscattered electron image (option) X-lay image (option)
	Scan mode CRT Frame memory Image processing Scan speed Electrical image shift Auto data display	Viewing Recording	Normal scan, reduced area, line scan, photo scan, spot scan, analysis scan, dual mag/split screen, oblique 12 inch viewing CRT X 2 1024 x 1024 pixel memory X 2 auto image Brightness control auto image Contrast control Gamma, dynamic stigmator monitor Auto focus, auto stigma TV, 0, 3, 2, 10, 20 s/frame 40, 80, 160, 320 s/frame $\pm 20\mu\text{m}$ (at 30KV, W.D=15mm) Film number, accelating voltage, magnification, micron bar, micron scale, date/year Working distance, printed on film automatically
VACUUM CONTROL	System Ultimate vacuum	valve control electron gun sample chamber	Full automatic, pneumatic valve control 10-7 Pa 10-4 Pa
	Vacuum pump Vacuum gauge	IP1 IP2 IP3 TMP Rotary pump Sample chamber Exchange chamber	60 l/s 20 l/s 20 l/s 340 l/s 145 l/min X 2ea Pirani & Penning gauge Pirani gauge

SYSTEM DIMENSION / UTILITY

DESC			Specification
DIMENSIONS	Column		82(w) x 88(d) X 155(h) cm, 320kg
	Display		110(w) x 90(d) X 116(h) cm, 235kg
	Power supply		54(w) x 77(d) X 179(h) cm, 270kg
	Rotary pump		49(w) x 54(d) X 92(h) cm, 75kg, 1ea
	Weight		20(w) x 18(d) X 16(h) cm, 40kg
Utility requirement	Room temp		15℃ ~ 25℃
	Room humidity		60% or less (RH)
	Power		Single phase AC 100, 115V ±10% 50/60Hz, 4KVA