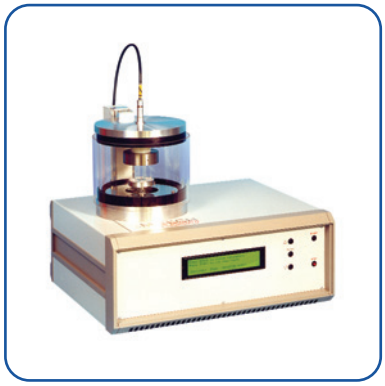
K100X Glow Discharge System

free-standing glow discharge system with 165mm chamber

unique 'stand alone' glow discharge system



K100X glow discharge system

K100X Glow Discharge System
The K100X operating in DC+ mode can draw up 1K, allowing ion etching of the specimen surface to remove oxide or resist layers. The polarity of the plasma can be changed for carbon film surface treatment or surface etching of metallic specimens.

Hydrophilisation
Freshly made TEM carbon support films tend to have hydrophobic surfaces which inhibits the spreading of suspensions of particles in negative staining solutions. However, after glow discharge treatment with air, the carbon film is made hydrophilic and negatively charged, thus allowing easy spreading of aqueous suspensions. With subsequent magnesium acetate treatment the surface is made hydrophilic and positively charged. In addition to glow discharge treatment using air, other process gases may be used to modify surface properties. For example, if alkylamine is used as a process gas, the carbon film surface will become hydrophobic and positively charged. On the other hand, using methanol as a process gas results in the surface becoming hydrophobic and negatively charged. Such treatments can facilitate the optional absorption of selected biomolecules.

Pumping
Requires a 50L/min rotary pump with oil mist filter (see product specifications below).

Atmosphere	Surface	Charge
Air	Hydrophilic	Negative
Air	Hydrophilic	Positive (with subsequent magnesium acetate treatment)
Alkylamine	Hydrophobic	Positive
Methanol	Hydrophobic	Negative

See: www.quorumtech.com for full technical specification and additional details.

Glow discharge summary

Surface Cleaning
In many instances, surfaces need to be completely cleared of contamination films or deposits. This applies particularly to EM components where such deposits impair the maintenance of a clean vacuum system. Glow discharge treatment can be used to clean such components of undesirable residues.

D.C. Glow Discharge
In the DC+ Mode, the glow discharge system can operate at up to 1Kv. This allows high efficiency ion etching of the specimen surface to remove, for example, oxide or resist layers.

Glow Discharge
The polarity of the head can be switched from positive to negative with respect to earth, for carbon film surface treatment or surface etching of metallic specimens.

PRODUCT SPECIFICATIONS

Supplied with	1m vacuum hose and fittings for a rotary pump, pump plug, operating manual, implosion guard
Electrical	230V 50 Hz (6A max), 115V 60 Hz (12A max)
Specimen stage	60mm with 6 stub holes, 3.4mm, 6.5mm and 15.2mm, motor driven rotation
Weight & dimensions	450mm W x 350mm D x 175mm H (630mm H including chamber). Weight 18Kg (unpacked)
Glow discharge (GD) specifications	GD range: 0-50mA, GD rate: 0-25nm/min. GD timer: 0-4 minutes. GD plasma voltage: 0-1kV DC variable, electrode polarity: - + or - DC via stainless steel electrode
Vacuum pumping	A 50L/min rotary pump is also needed (see: Emitech EK3175)
Operating vacuum	Up to 10^{-2}mbar