

SC7620

'Mini' Sputter Coater/Glow Discharge System

A compact, dual purpose rotary pumped sputter coater/TEM glow discharge system



The SC7620 features:

- Simple operation
- For noble (non-oxidising) metals
- Suitable for W-SEM sputtering applications
- Glow discharge capability
- Carbon fibre evaporation option
- Adjustable height specimen stage
- Small footprint
- Robust and reliable

Quorum

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SC7620

'Mini' Sputter Coater and Glow Discharge System

The SC7620 is a compact scanning electron microscope (SEM) sputter coater, which when combined with the optional carbon attachment makes the ideal low cost SEM sputtering and carbon coating package. Additionally, the SC7620 is fitted as standard with a glow discharge function, allowing the hydrophilisation (wetting) of carbon coated TEM grids and other surface modifications. A panel-mounted switch allows the system to be easily changed between sputter coating and glow discharge modes.

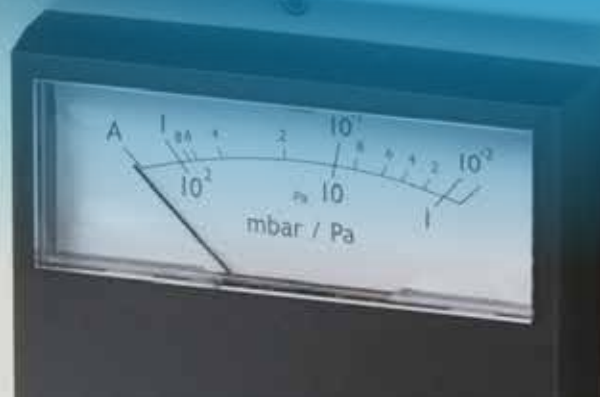
The SC7620 is primarily designed for coating specimens prior to examination with tungsten filament SEMs. For extra fine grain coating required for most FE-SEM applications, high vacuum coating is required – see models Q150T Plus and Q300T T Plus. Typical sputtering rates for gold in argon are in the region of 8.8 nm/min and normal cycle times are less than five minutes.

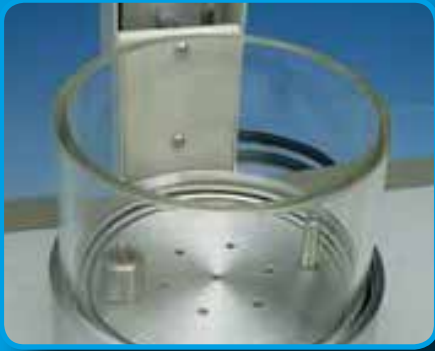
CURRENT LIMIT



TIME-SECONDS

75 90 105
60 120
45 135
150
180 165





Adjustable height specimen stage and chamber



Optional carbon fibre evaporation attachment



SC7620 and optional carbon evaporation attachment



Switch to change between sputtering and glow discharge modes

Main features

The SC7620 is ideally suited to the budget-conscious user who also demands reproducible results in an easy-to-use instrument. The SC7620 uses a basic magnetron sputtering head with a simple to replace disc target (gold/palladium as standard). The sputtering head is hinged for easy operation and fitted with electrical safety interlocks. The plasma current is variable by adjustment of the vacuum level using an argon leak valve with the plasma voltage pre-set.

Fast cycle times

The compact 100 mm/4" diameter Pyrex work chamber is mounted on an aluminium collar and the small volume helps to ensure rapid pump-down and cycle times.

The 90 mm diameter specimen stage is height-adjustable and can easily be removed to accommodate larger specimens (the maximum target to stage distance is 65 mm). Sputtering is controlled manually by a 180 second timer and gas pressure and plasma current are monitored by analogue meters.

Carbon coating option

For SEM X-ray microanalysis applications the standard SC7620 can be converted to deposit carbon by the addition of an optional carbon evaporation attachment, consisting of a power supply and a carbon fibre evaporation head (SC7620-CF). The carbon attachment includes an additional, taller glass cylinder to ensure that the source to specimen distance is optimal for carbon coating. A manually operated source shutter protects specimens during the carbon fibre out-gassing stage.

Glow discharge mode

Freshly-made transmission electron microscopy (TEM) carbon support films tend to have a hydrophobic surface. This hinders the collection of TEM sections from the surface of a water bath and prevents the spreading of suspensions of particles in negative staining solutions. However, after glow discharge treatment with air, carbon films can be made hydrophilic and negatively-charged, allowing the collection of TEM sections and the easy spreading of aqueous suspensions.

Pumping

A Pfeiffer DUO 6.5 m³/hr⁻¹ rotary vacuum pump with oil mist filter is recommended (see 13034).



Ordering Information

NB: For a full quotation, contact us or our local distributor

SC7620 'Mini' Sputter Coater/Glow Discharge System
Supplied with: SC502-314B gold/palladium (Au/Pd) target,
1 m length of flexible vacuum hose, fittings to a rotary pump,
comprehensive operating manual

Optional accessories and consumables

SC7620-CF Carbon fibre evaporation attachment, including 1 m C5421 carbon fibre cord

13034 Pfeiffer DUO 6 5 m³/hr¹ rotary vacuum pump with oil mist filter

07803 Spare oil mist filter

Additional / spare sputtering targets. All 57 mm in diameter

SC502-314A Gold (Au) target 0.1 mm thick

SC502-314A/0.2 mm Gold target (Au) 0.2 mm thick

SC502-314B Gold/palladium (Au/Pd) target 0.1 mm thick

SC502-314B/0.2 mm Gold/palladium (Au/Pd) target 0.2 mm thick

SC502-314E Silver (Ag) target 0.1 mm thick

SC502-314G Palladium (Pd) target 0.1 mm thick

Additional carbon fibre for use with the optional carbon evaporation attachment

C5421 Carbon fibre cord (1 m)

C5421-10 Carbon fibre cord (10 m)

C5421-100 Carbon fibre cord (100 m)

C5461 Carbon fibre cord, fine strands (1 m)

C5461-10 Carbon fibre cord, fine strands (10 m)

C5461-100 Carbon fibre cord, fine strands (100 m)

SC7620 Specification

Instrument case:	340 mm W x 310 mm D x 330 mm H, including chamber (unpacked). Weight: 20 kg
Work chamber:	Borosilicate glass, 100 mm ID mounted on an aluminium collar
Sputter targets:	Disc style 57 mm Ø gold/palladium target (SC502-314B) is fitted as standard. Other metals available – see Ordering Information
Power:	20 V AC x 50 Amp. Available for either 230 V (3 A max) or 110 V (6 A max) operation at 50/60 Hz
Vacuum pump requirement:	Pfeiffer DUO 6 5 m ³ /hr ¹ rotary vacuum pump with oil mist filter (order separately, see 13034)
Vacuum measurement:	Pirani gauge with analogue display
Typical ultimate vacuum:	2 x 10 ⁻² mbar in a clean system
Specimen stage:	89 mm diameter, height-adjustable (normal working distance: 45 mm). No rotation or tilt
Timer:	Manually by a 180 second analogue timer with 15 second resolution
Glow discharge:	Operates at 100 mA in DC + mode and 30 mA in DC- mode
Power supply output:	Normal operation is up to 800 V DC at 20 mA. Maximum output 1,200 V DC
Electrical supply:	90-250 V 50/60 Hz 1,400 VA including Pfeiffer DUO 6 rotary pump supply. 110/240 V voltage selectable
Gases:	Argon sputtering process gas, 99.999% purity recommended
Optional carbon fibre evaporation attachment (SC7620-CF)	
Power:	20V AC x 50 A. Available for either 230 V (3 A max) or 110 V (6 A max) operation at 50/60 Hz
Carbon source:	Carbon fibre cord

For full specifications, please see our website

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