

Manual Sputter Coater AGB7340



Compact manual benchtop coating unit with pumping system for fine grain coating of SEM samples

The Agar sputter coaters are ideally suited for routine sample coating applications. Simple and economical to operate, the compact bench top units offer rapid pump down times, fine grain coatings and negligible sample heating.

The sputter coaters are supplied complete with a pumping system for use with an alternative pump. The pumping system can be readily interchanged and shared with the Agar carbon coater. Alternatively, the dual pumping system with changeover valve enables two Agar coating units to share the same pump.

The Agar range of film thickness monitors can be added to measure coating thickness.

Sputter Chamber

The fully annealed Pyrex work chamber (120 x 120mm) is sealed with wide section 'O' rings to the base-plate and hinged top-plate. The base-plate contains the large area pumping port and a feedthrough port for the optional film thickness monitor.

The standard specimen table accepts up to 12 stubs of ½" diameter. The height of the table is adjustable to give working distances through 60mm.

Sputter Head

The hinged top-plate contains the 'cool' planar magnetron sputtering head with a quick change of 57mm dia 0.1 mm thickness gold target delivered standard.

Other targets such as platinum and gold/palladium can be readily interchanged. A vacuum safety interlock prevents operation with the chamber open.

The sputter head includes an wrap-around dark-space shield.

Control System

Sputtering conditions are controlled through the argon leak valve located on the rear side of the coater and through the potentiometer for current adjusting located on the front panel.

Sputtering time is set via the digital timer from the coater front panel. The sputtering process can be temporarily stopped during the sputtering time set by pushing a button located on the front panel.

A test facility allows the conditions to be pre-set prior to initiating the timed sequence.

A meter displays vacuum level and sputtering current.

The optional film thickness monitor can be used to determine coating thickness.

Pumping System

The system is pumped a rotary pump. The rotary pump complete with anti-vibration platform is designed to sit on the bench behind the main unit.

The system is designed to achieve a vacuum lower of 0.1 mBar in about 20 – 25 seconds. The pumping speed is 3.0/3.6 m³/hr (50/60Hz).

Thickness Monitors

The Agar film thickness monitors are designed for use with the coating units. Each monitor has a four digits LED display, push button zero and crystal lifetime check.

The density of two different target materials can be stored in the memory. The tooling factor compensates for differences between the specimen and crystal positions in the chamber. The monitor can also be used with the Agar carbon coater.

Resolution of measured coating thickness is better than 0.1nm for any material.

Specifications

Chamber size	120mm dia x 120mm high (4.75" x 4.75")
Sputter target	Gold target \varnothing 57 x 0.1mm fitted as standard Optional targets: Au/Pd, Pt, Pt/Pd, Ag 57mm dia. x 0.1mm thick, or 57mm dia. x 0.2mm thick
Sample table	Holds 12 SEM ½" (12.5 mm) stubs Height adjustment through 60mm
Sputter supply	Microprocessor based Safety interlocked Current control independent of vacuum, 10 - 40mA
Sputter head	Low voltage planar magnetron type with quick target change Wrap-around dark-space shield
Analogue metering	Vacuum: atmosphere - 0.001mb Current: 0 - 50mA
Control method	Manual gas and current control Digital timer (5 - 300 sec) with pause Manual vent
Thickness monitoring	Film Thickness Monitor (AGB7348) as option
Dimensions	420mm Wide x 295mm Deep x 287mm Height
Weight:	10Kg
Power consumption	40 VA max.

Pumping System

Configuration:	High speed, direct drive 2-stage
Pumping speed:	3.0/3.6 m ³ /hr (50/60Hz)
Pump downtime:	Pump downtime to 0.1mb is 20/25 sec.
Bench top system:	Vacuum pump is mounted on benchtop compatible anti-vibration table with stainless steel bellows coupling system

Services required

Supply	100 – 120 or 200 – 240 VAC, 50/60Hz (to be specified on order)
--------	---

Agar Scientific Ltd

Unit 7, M11 Business Link, Parsonage Lane, Stansted, Essex CM24 8GF UK
t: +44 (0)1279 215 506 ♦ e: sales@agarscientific.com ♦ w: agarscientific.com

Power	170 VA max.
Argon Gas	Purity min. 99.9% Pressure: regulated 7 – 8 psi (0.5 – 0.6 bar) Hose connection: 6.0 mm (1/4")

Thickness Monitors (optional)

General specification:	Microprocessor based 4 digit display, push button zero 6MHz crystal with lifetime check 5/sec update rate
Thickness range:	0 nm to 999.9 nm
Resolution:	Better than 0.1nm
Density range:	0.50-30.00gm/cm ⁻³
Tooling factor range:	0.25-8.0
Termination range	0 nm to 999.9 nm

Ordering Information

<i>Product</i>	<i>Order Code</i>
Manual Sputter Coater	AGB7340
Benchtop pumping system for coater	AGB7366
Options:	
Film Thickness Monitor	AGB7348 (option)
Thickness monitor crystals (Pk 10)	AGB7732
Targets:	
Platinum/Palladium Disc Target, Ø57mm x 0.1mm	AGB7395
Platinum/Palladium Disc Target, Ø 57mm x 0.2mm	AGB7395-2
Gold Disc Target, Ø 57mm x 0.1mm	AGB7390 (one delivered standard with new system)
Gold Disc Target, Ø 57mm x 0.2mm	AGB7390-2
Gold/Palladium Disc Target, Ø 57mm x 0.1mm	AGB7391
Gold/Palladium Disc Target, Ø 57mm x 0.2mm	AGB7391-2
Platinum Disc Target, Ø 57mm x 0.1mm	AGB7392
Platinum Disc Target, Ø 57mm x 0.2mm	AGB7392-2
Silver Disc Target, Ø 57mm x 0.1mm	AGB7394

Note: If the pumping system need to be shared with other Agar coating system, a Dual pumping system for two coating units (AGB7736) needs to be ordered instead of AGB7366.