

CRESSINGTON SCIENTIFIC INSTRUMENTS

Sputter Coaters



Compact modern desktop systems with fast cycle times
and low cost thickness monitors

108family



Cressington **108** Sputter Coater
(shown without thickness monitor, see photograph below)

Cressington 108 Sputter Coater

Cressington **108** Sputter Coaters are ideal for routine sample preparation. Compact, economical and simple to operate, they offer rapid pumpdown times, fine-grain coatings and negligible sample heating.

Cool, fine-grain sputtering is achieved with a very efficient dc magnetron head. A quick-change target method allows a range of metals to be used.

The safety interlocked sputtering supply is fully variable and setting the sputter current is not influenced by vacuum level.

108

Although it is the simplest sputter coater in the Cressington range the **108** has an excellent specification.

The standard **108** has fully variable current control, digital process timer with “pause”,

variable height specimen table, hinged top-plate and o-ring sealed vacuum chamber.

The current controller allows independent choice of sputter current and argon pressure. Coverage and grainsize are optimised for any specimen.

The **108** can be factory fitted or retro-fitted with the Cressington high resolution thickness monitor system MTM-10.



108auto

The Cressington **108auto** sputter coater offers the choice of manual or automatic operation. The specification also includes automatic vent (with a choice of vent gas) and argon purge control.



Cressington *108auto* Automatic Sputter Coater
(shown without thickness monitor, see front cover)

In automatic mode the coater can be controlled in two ways. The digital timer can be used to give repeatable coatings or the (optional) MTM-20 controller can be used to terminate the sputtering process at the desired thickness.



The sputter current is set on a digital programmer and is not dependent on the argon gas pressure in the sputtering chamber. Pressure adjustment and current adjustment are carried out separately.

Pumping System

The modular desktop design combines sputter control unit, pumping system and thickness monitor into an area of only 16" x 24" (42cm x 60cm).

The desktop pumping system is fully integrated using a quick release all metal coupling system.

The compact high speed rotary pump (30sec to 0.1mb) is mounted on an anti-vibration table with a desktop base.

Thickness Monitors

All Cressington sputter coaters have a thickness monitor feedthrough port. Two types of high resolution thickness monitors are available.

Each monitor has a 4 digit LED display, push button zero, and crystal lifetime check. Resolution is better than 0.1nm for any material.



Specifications

108 and 108auto

Chamber size:	120 dia x 120 high (4.75" x 4.75")
Sputter target:	gold fitted as standard (Au/Pd or Pt optional) 57 dia x 0.1 thick
Sample table:	holds 12 SEM stubs height adjustment thru 60mm
Sputter supply:	microprocessor based safety interlock variable, 40mA max
Sputter head:	low voltage planar magnetron quick target change wrap-around dark-space shield
Analog metering:	vacuum Atmos - .001mb current 0-50mA
Thickness monitoring:	MTM-10 or MTM-20

108 only

Control method:	manual gas and current control digital timer (0-300sec) with pause manual vent
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108auto only

Sputter supply:	programmable digital control
Thickness control:	use terminating MTM-20
Control method:	automatic operation of gas purge and leak functions automatic process sequencing full manual override digital timer (0-300sec) with pause automatic vent

Pumping System

Rotary pump:	high speed, direct drive, 2 stage two pump speed options
Pumpdown time:	less than 30 sec to 0.1mb
Desktop system:	vacuum pump is mounted on desktop compatible anti-vibration table all-metal integrated coupling system

Thickness Monitors

MTM-10, MTM-20

General specification:	microprocessor based 4 digit display, push button zero 6MHz crystal with lifetime check 5/sec update rate
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Thickness range:	0.0 - 999.9nm (pos./neg.)
Resolution:	0.1nm (gold or carbon)
Density range:	0.50 - 30.00mg/cm ³

MTM-10 only

Tooling factor range:	0.25 - 8.0
Date change facility:	2 source memory (e.g. Au sputter and C evaporation)

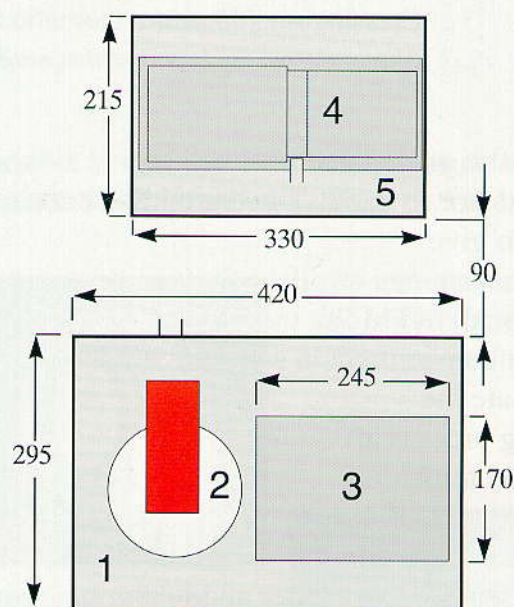
MTM-20 only

Tooling factor range:	0.25 - 8.0
Terminating facility:	0-999.9nm (for use with 108 auto only)

Ordering Information

Product	Order Code
108 Sputter Coater (with 81001)	81105
108 Auto Sputter Coater (with 81001)	83105
Desktop Pumping Systems:	
2.0/2.4m ³ /hr 50/60Hz	80110
2.5/3.0m ³ /hr 50/60Hz	80115
Dual Pumping Systems:	
2.0/2.4m ³ /hr 50/60Hz	80120
2.5/3.0m ³ /hr 50/60Hz	80125
Pump Exhaust Filters (5)	80156
Thickness Monitor System (MTM-10)	80225
Thickness Controller System (MTM-20)	80235
Thickness Monitor Crystals (10)	21300
Gold Target (57 x 0.1)	81001
Platinum Target (57 x 0.1)	81002
Gold/Palladium Target (57 x 0.1)	81003
Platinum/Palladium Target (57 x 0.1)	81006
Gold Target (57 x 0.2)	81007
Copper Target (57 x 0.1)	81008
Silver Target (57 x 0.15)	81011

Dimensions (mm)



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|---------------------|-----------------------|
| 1 Control unit | 4 Rotary pump |
| 2 Vacuum chamber | 5 Anti-vibration base |
| 3 Thickness monitor | |

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