208HR HIGH RESOLUTION SPUTTER COATER

For FE-SEM Applications That Need Extremely Thin, Fine Grain, Uniform Coatings

Shown with MTM-20 High Resolution Thickness Controller and Rotary-Planetary-Tilting Stage (RPT)

208HR High Configuration

The Cressington 208HR High Resolution Sputter Coaters offer real solutions to the problems encountered when coating difficult samples for FESEM imaging. FESEM applications need extremely thin, fine grain, uniform coatings to eliminate charging and to improve contrast on low density materials. In order to minimize the effects of grain size the 208HR offers a full range of coating materials and gives unprecedented control over thickness and deposition conditions. The 208HR Turbo Pumped High Vacuum System offers a wide range of operating pressures allowing precise control of both uniformity and conformity of the coating, minimizing charging effects. The HIGH / LOW chamber configuration allows easy adjustment of the distance from target to sample. The MTM-20 High Resolution Thickness Controller has a resolution of 0.1nm. This enables precise and reproducible thin coatings, especially in the range of 0.5 - 3nm, a thickness desirable for FESEM applications.

The 208HR system is available in a number of configurations to enable delivery of the best high resolution coatings for many applications. The 208HR can be supplied with a standard rotary backing pump or a dry scroll pump for clean room applications. The standard 208HR includes both Chromium and Platinum/Palladium as target materials. There is also a 208HR Iridium including an Iridium target providing excellent fine grain coating for high resolution FE-SEM imaging on a wide variety of samples.

Features of the 208HR High Resolution Sputter Coater Include:

- **Wide Choice of Coating Materials**
  Magnetron head design and effective gas handling allow a wide choice of target materials.
- **Precision Thickness Control**
  Thickness optimized for FESEM operating voltage using the MTM-20 High Resolution Thickness Controller.
- **Multi-angle Stage Movements**
  Separate rotary, planetary and tilting stage movements ensure uniform coating with excellent conformity, even on highly topographic samples.
- **Multiple Sample Holders**
  Four sample holders are provided to accommodate sample sizes as large as 32mm diameter or up to 6 stubs per holder.
- **Variable Chamber Geometry**
  Used to adjust deposition rates up to 1.0nm/sec to optimize structure.
- **Wide Range of Operating Pressures**
  Independent power and pressure adjustment allows operation at argon gas pressure range of 0.2 - 0.005 mbar.
- **Compact, Modern, Benchtop Design**
  Space and energy saving design eliminates need for floor space, water or specialized electrical connections.
- **Ease of Operation**
  System operation and setup is very similar to standard sputter coating and does not require additional cleaning compared to ion beam coaters.

ROTARY PLANETARY TILTING STAGE

This stage offers multi-angle movements of multiple samples and can be configured with 4 specific holders for most type of SEM mounts, large specimen mounts and cross sections. The R-P-T enables better uniformity and more conform coating on topographic samples than with a static stage. It enables coating of a larger number of samples. The R-P-T fits all larger chamber configurations found on the 208 and the 108/SE series of Cressington coaters. With the special Large Sample Adapter, the R-P-T stage can be used as a rotary stage.

See reverse side for complete ordering information.

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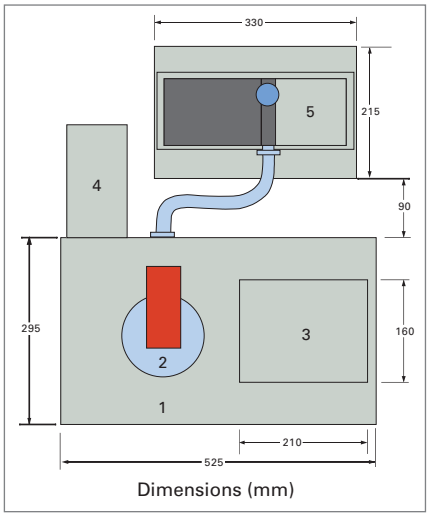
208HR HIGH RESOLUTION SPUTTER COATER

TECHNICAL SPECIFICATIONS FOR 208HR

Sputter Head	Low voltage planar magnetron; Quick target change; Wrap-around dark-space shield; Shutter for target conditioning
Targets	Cr, Pt/Pd (standard) or Ir (Iridium Coater); Optional: Au, Au/Pd, Cu, Ni, Pd, Pt, Ta, Ti and W
Sputter Supply	Microprocessor based; Safety interlock; Constant current control independent of vacuum; Digitally selectable current (20, 40, 60 or 80mA)
Chamber Size	150mm OD (6"); Variable height, 165 - 250mm (6.5" - 9.8") including glass cylinder (65mm H and 2 metal spacer rings)
Sample Stage	Non-repetitive rotary, planetary motion with manual tilt 0-90°; Variable speed rotation; Crystal head; 4 sample holders (specify when ordering)
Analog Metering	Vacuum Atm - 0.001mb; Current 0-100mA
Control Method	Automatic operation of gas purge and leak functions; Automatic process sequencing; Digital timer (0-300 sec) with pause; Automatic venting
Thickness Control	MTM-20 controller with terminating facility
Electrical Requirements	100-120 or 200-240 VAC, 50/60Hz (specify on order)
Power Requirements	500VA max.
Argon Gas	Purity, min. 99.99%; Working pressure 5-6 psi (0.4 bar); Hose connection, 6.0mm (1/4")

FOOTPRINT



Dimensions (mm)

1. Control Unit
2. Vacuum Chamber
3. Thickness Monitor
4. Turbo Molecular Pump
5. Rotary Pump & Anti-Vibration Table

TURBO DRAG / HIGH SPEED ROTARY PUMP COMBINATION

- Pumping Speed: 300 l/min at 0.1mb
- Pumpdown Time: 1 min to $1x10^{-3}$ mb
- Desktop System: rotary pump mounted on desktop anti-vibration table
- All metal vacuum integrated coupling system, includes exhaust filter

OPTIONAL DRY SCROLL PUMPS FOR CLEAN ROOM APPLICATIONS AVAILABLE

- Oil-free technology eliminates the possibility of oil contamination
- Decresed operation costs without the need to check or change oil or filters

ORDERING INFORMATION

8000	208HR High Resolution Sputter Coater, Cr, Pt/Pd Target, 115V*.....each
8002	208HR Iridium Coater, Ir Target, 115V*.....each
8004	208HR High Resolution Sputter Coater, Dry Pumping System, Cr, Pt/Pd Target, 115V*.....each
8008	208HR Iridium Coater, Dry Pumping System, Ir Target, 115V* .....each
8000-220	208HR High Resolution Sputter Coater, Cr, Pt/Pd Target, 220V*.....each
8002-220	208HR Iridium Coater, Ir Target, 220V*.....each
8004-220	208HR High Resolution Sputter Coater, Dry Pumping System, Cr, Pt/Pd Target, 220V*.....each
8008-220	208HR Iridium Coater, Dry Pumping System, Ir Target, 220V* .....each
8074	Chromium Target, 99.95% Cr (ø57mm x 3.2mm).....each
8076	Platinum/Palladium Target, 99.99% Pt:Pd, 80:20, (ø57mm x 0.1mm).....each
91120	Iridium Target, 99.95% Ir (ø57mm x 0.3mm).....each
91114	Platinum Target, 99.95% Pt (ø57mm x 0.1mm).....each

* The Complete High Resolution Sputter Coater 208HR includes: Pumping System; Thickness Controller MTM-20; Rotary-Planetary-Tilting Sample Stage with 4 Sample Holders; Cr & Pt/Pd Targets or Ir Target

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