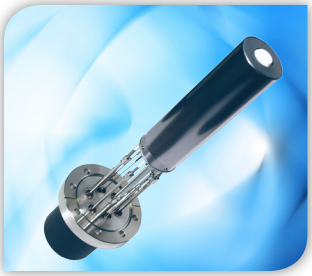
Effusion Cells and Options

EFFUSION CELLS



The Effusion Cell (Knudsen Cell) is the staple of Molecular Beam Epitaxy technology. SVT Associates offers a wide selection of models and sizes to evaporate almost any elemental or compound material. Each Effusion Cell is manufactured from high purity materials with all ceramic and refractory metal hot zones. This ensures no undesired outgassing in a UHV environment as well as the longevity of the cells. All sources are fully bakeable to 250 ºC.

The Effusion Cell is a highly controllable and efficient deposition source for MBE and non-epitaxial Physical Vapor Deposition. The radiatively heated crucible with a close coupled thermocouple ensures stability and reproducibility not found with other evaporation sources. The optimally shaped crucible increases material utilization.

SOURCE SHUTTER

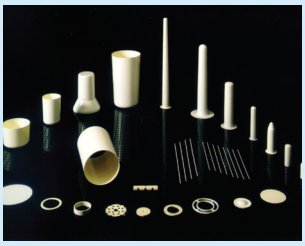
SVT Associates' integral source shutters are designed for quick rotary motion and long life. The source shutter assembly consists of an in-vacuum component, an external component and a shutter blade. The shutter blades are made of either Mo, TA, or PBN. Other materials are available on request. SVT Associates also offers a full computer controllable shutter package that includes a 19" rack mountable control unit. Actuation times are as small as 100 ms with soft actuations for minimal mechanical shock.

WATER-COOLING

Integral water-cooling is available as an option on many of SVT Associates' effusion cells. Sources may be water-cooled using either a cooling coil or cooling jacket. In the cooling coil, water flows through a coiled tube where as in the cooling jacket water flows through a cylindrical housing, both extend the length of the source.

CRUCIBLES

SVT Associates has a wide range of crucibles for effusion cells available. Crucibles can be tailored to fit your specific needs.

Sizes Available				
Flange Size	2.75"	4.50"	6.00"	
Crucible Size	2 – 40 cc	Up to 100 cc	Up to 500 cc	
Materials Available	PBN, Pyrolytic Graphite, Tungsten, Tantalum, Alumina, Quartz			

Not all sizes are available in all materials. Contact SVT Associates for size and material options or for any custom sizes.

POWER SUPPLY/CONTROLLERS

SVT Associates offers a complete line of power supply controllers that include PID temperature controllers for accurate and reliable operation of our effusion cells. Achieve excellent flux stability using closed-loop temperature or power feedback. Includes a fully bakeable 7 m (25 ft) cable.

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