Valved Sources
Precision Control for High Vapor Pressure Materials

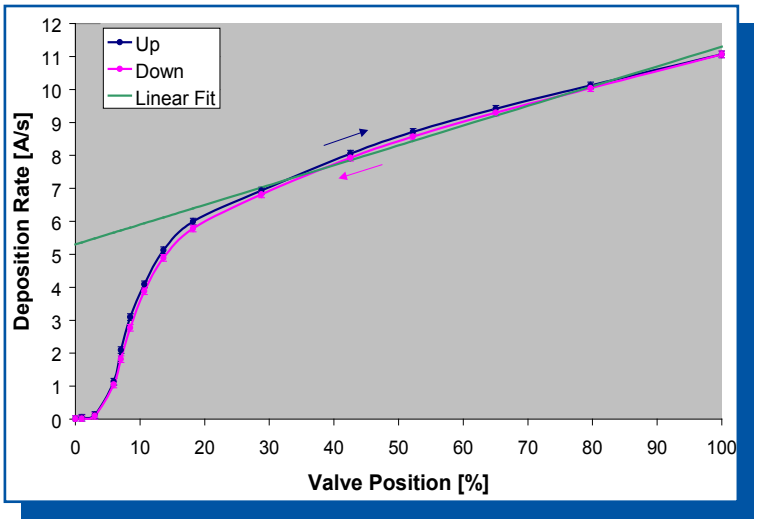
Description

SVT Associates Valved Deposition Source provides precision flux control of high vapor pressure materials. Incorporating a proprietary valve design, the Valved Deposition Sources offer reproducible growth and instantaneous flux response. An optional motorized valve provides automated process control.

The Valved Deposition Source coupled with the optional flux distribution manifold provides uniform deposition on large area substrates. Ideal for in-line processing such as thin film solar cell and OLED manufacturing, the distribution manifold utilizes the SVT Associates changeable aperture design for fine tuning of the flux profile. The distribution manifold increases material incorporation by directing all of the flux onto the substrate as well as can be placed within close proximity of the sample for increased growth rate.

An optional thermal excitation region can be incorporated in the Valved Deposition Source to increase the reactivity of large polyatomic molecules. The thermally excited molecules decrease material consumption and improve material quality for materials incorporating sulfur and selenium.

SVTA-C-SE-30000: 30 L Valved Selenium Source



The proprietary valve design provides smooth and reproducible flux ramping. Data taken from SVTA-C-SE-200 source.

Features

- Needle Valve Design for Precision Flux Control of High Vapor Pressure Materials
- Optional Thermal Excitation Zone Increases Material Incorporation
- Customizable Flux Distribution Manifold Available
- Large Capacity Models for Extended Growth Campaigns
- Optimized for Large Sample Thin Film Solar Cell and OLED Applications

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Valved Sources
Specifications

Available Models

Model	Capacity	Compatible Materials
SVTA-VC-200	200 cc	As, Sb, Se, Te, S
SVTA-VC-500	500 cc	As, Sb, Se, Te, S
SVTA-C-15000	15,000 cc	Se, Te, S
SVTA-C-30000	30,000 cc	Se, Te, S

Performance Specifications

Feedthrough Flange	4.5" (DN63) CF Flange Other Configurations on Request
Maximum Bulk Evaporator Temperature	450 °C, 500 °C outgassing
Maximum Manifold Temperature	700 °C, 900 °C outgassing
Source Temperature Stability	± 0.1 °C
Thermocouple Type	Type K
Electrical Connectors	Atmosphere Side Filaments: Amphenol Circular T/Cs: Omega Subminiature
Bake Temperature	200 °C
Maximum Operating Pressure	$1x10^{-4}$ Torr
Deposition Uniformity	(@300 mm) ± 4%
Deposition Uniformity	(@200 mm) ± 6%
Flux Stability	1%, with integral flux sensor
Heat-Up Time	(400 °C) < 60 min
Cool-Down Time	(100 °C) < 120 min