Atomic Hydrogen Source

Description

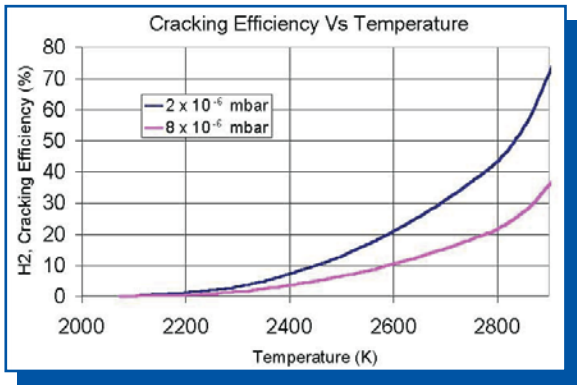
The Atomic Hydrogen Source operates on the principle of electron beam heating. It can produce temperatures up to 2,500 °C. Hydrogen gas is introduced and thermally cracked to produce only atomic hydrogen. It does not produce ionized species, and therefore eliminates the possibility of damage to the substrate, making it an excellent tool for substrate cleaning.

The compact SVTA-H1-1 mounts on a standard 2.75" (70 mm) CF flange. An adapter flange is available for larger port sizes, making the compact SVTA-H1-1 retrofittable to any MBE systems. The recommended power supply for the atomic hydrogen is SVTA-H1-PS. The atomic hydrogen power supply consists of three individual supplies. A high voltage supply provides the source bias, a high current supply provides the filament power, and a controller is connected to the other two supplies and maintains the output emission current. It also provides the flux monitor bias while measuring and displaying flux monitor current.

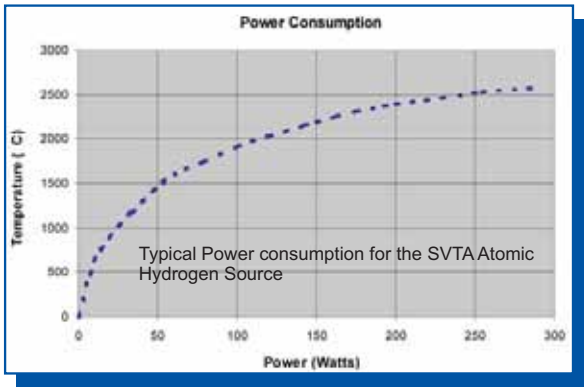
Specifications

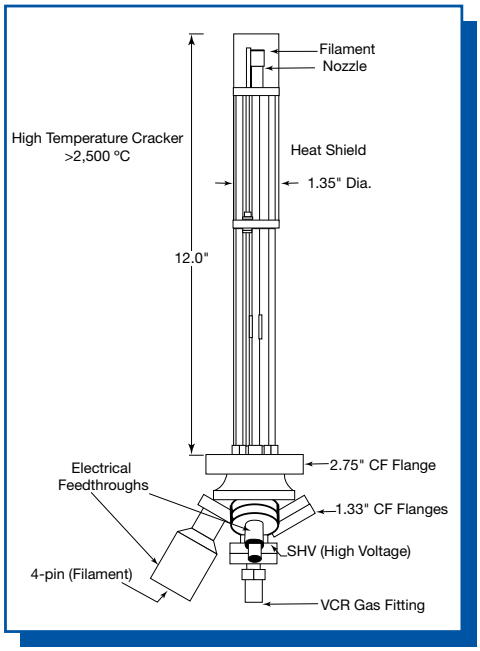
Power	300 W
Emission Current	100 mA
Temperature	2,873 K
Filament Current	15 A
Tube Material	W, Mo
Electrical Connectors	Filaments: Amphenol Circular High Voltage: SHV
Mounting Flange	2.75" (70 mm) 4.50" (114 mm) CFF
In-Vacuum Length	12" (or Custom)
Option	Water Shroud

Models	Description
SVTA-H1-1	12" Length Hydrogen Source
SVTA-H1-PS	Power Supply
SVTA-H1-PSC	Power Supply Cable



The above curve shows the cracking efficiency for the SVTA-H1-1 source. The H_2 flow rate will vary according to the system type and application. The best working conditions are strongly dependent on the H_2 pressure and the gas flow rate.





Schematic drawing of the Atomic Hydrogen Source