

## Valved RF Cracker

For atomic As, P, S, Se, Sb, Te

### The QC500

The patented QC500 valved cracker enables the generation of *atomic* species from solid group V and VI elements. The cracker incorporates a generous 500cc sublimator zone as well as a red-to-white conversion zone (for phosphorous) to avoid pressure bursts seen in conventional two-zone crackers. The sublimated material passes through a high-purity all-quartz valve into an RF cracking zone. In contrast to a thermal cracking zone, the RF plasma acts to dissociate the material to the more reactive atomic form allowing higher growth rate and dopant incorporation to be achieved.

The RF cracking zone can also be used to generate atomic nitrogen or oxygen for high-quality oxide or nitride growth.

The high-purity quartz valve is actuated externally by a conventional manual or motorised linear drive and is located close to the RF cracking zone for rapid dose control.

The sublimator zone and discharge cracking zone are surrounded by water-cooled shielding, thus reducing the thermal load on the system.

The sublimator housing can be independently removed on guide rails for easy replenishment of source material.

#### Applications

- Group V and VI cracking
- Doping, bulk growth
- Improved sticking efficiencies

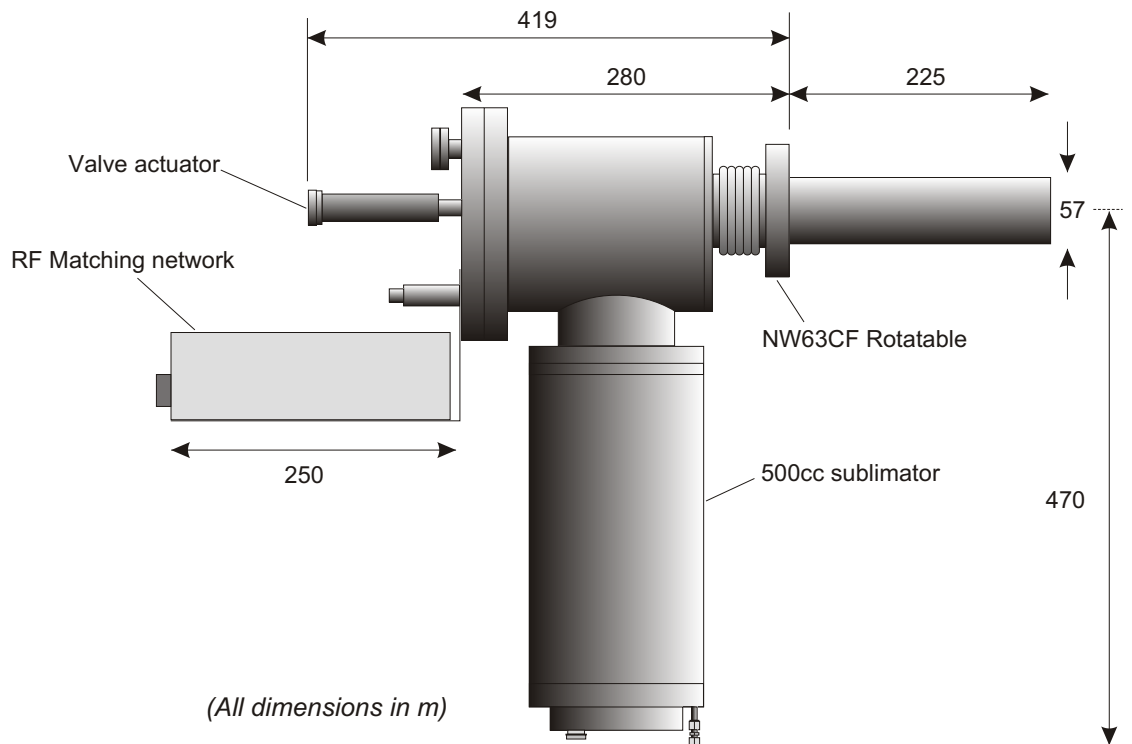
#### Features

- Atomic species
- Low thermal load
- Valved flux regulation
- Universal cracker
- High sublimator capacity



# QC500

# Specification



## Specification - QC500

<b>Mounting</b>	NW63CF
<b>Sublimator capacity</b>	500cc
<b>Max. RF power</b>	500W
<b>Beam Diameter</b>	Divergent. 25mm at source exit
<b>Sublimator/buffer temperature</b>	Max. 450 °C
<b>Valve material</b>	High-purity quartz
<b>In-vacuum Length</b>	225mm
<b>In-vacuum diameter</b>	57mm

## Options

- Automatic tuning unit. Motorised valve actuator. Plasma monitor

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