

Features

- 100% UHV construction
- Fine-bore capillary - high efficiency
- Compatible with oxygen dissociation
- Up to 90% cracking efficiency
- E-beam heated capillary
- Minimal thermal load
- Intrinsic water-cooling
- Integral manual or automatic shutter

Applications

- Oxide growth
- Atomic hydrogen or oxygen cleaning
- H-atom induced surface mobility enhancement
- Surface Science
- MBE
- Surface passivation
- Doping

Specifications

The MANTIS MGC75 source passes gas through a fine-bore capillary which is heated by electron-beam bombardment. Electrons emitted from the filament bombard and heat the outside of the cracker tube, while the gas passes up through the inside and is dissociated on the hot capillary walls. With this configuration there is no electron-impact ionisation and the atomic beam is truly neutral.

The highly efficient catalytic nature of the instrument

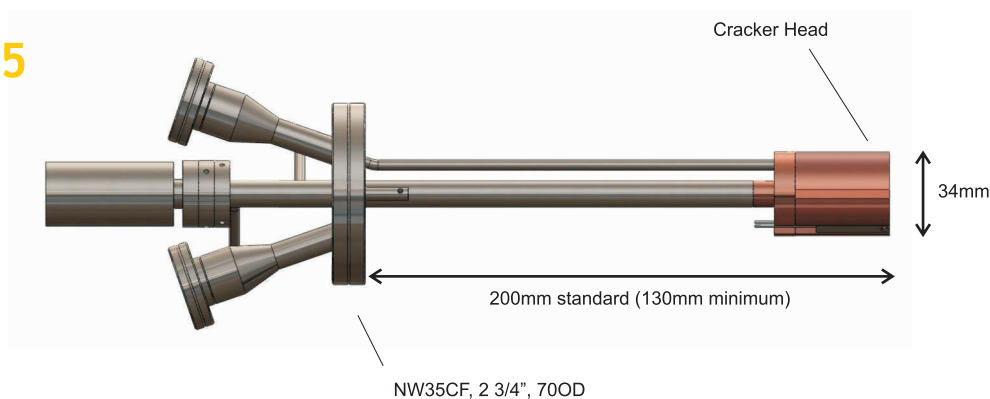
enables a substantially lower operating temperature (<1000C), requiring minimal power (<60W) to achieve substantial dissociation (>70%). This is in sharp contrast to Tungsten filament cracker designs which are incompatible with reactive gases and use a much higher temperature while not inducing a high dissociation.

The MGC75 body is directly water-cooled to ensure minimal out-gassing of the instrument. A dual filament

design allows for continuous operation over long periods without maintenance. Because of the excellent water-cooling and need for low gas flow and power, the MGC75 places very little heat and gas load into your vacuum chamber.

The MANTIS cracker is ideal for use with hydrogen, oxygen, chlorine and other reactive gases. The source is fully UHV compatible but can safely be operated at pressures as high as 5×10^{-4} Torr.

MGC-75



Mounting flange

In-vacuum length

In-vacuum diameter

Max Power required for optimum cracking

Gas Flow

Cracking efficiency

Cooling

NW35CF

200mm (standard)

34mm

75W

0-1 sccm

Up to 90% (Hydrogen)

Water (0.5 l/min required)

Utilities

Water: minimum flow 0.5 l/min. Clean mains water acceptable.
Standard cable length: 5m
Input: Power supply: Single Phase, 100-240V, 50/60 HZ.

Accessories

Integral manual and automatic (servo) shutters



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