

Thermal Gas Cracker

MGC75 Thermal cracker compatible with reactive gases
Applications Surface Science, Oxides, Hydrogen Cleaning.

Thermal Gas Crackers

Thermal gas crackers are used to dissociate molecular gases, most commonly hydrogen, to atomic form, thereby increasing their reactivity by many orders of magnitude. In contrast to plasma-based atom sources (such as our MATS series) there is no intrinsic minimum in the gas flow requirement, which makes these sources suitable for low-flow applications such as Surface Science.

MGC-Series

The MANTIS MGC75 source exploits e-beam heating technology, incorporating an oxygen-resistant filament and a fine-bore inert cracker tube which is connected directly to the gas inlet line. Electrons emitted from the filament bombard and heat the outside of the cracker tube, while the gas passes up through the inside. With this configuration there is no electron-impact ionisation and the atomic beam is truly neutral.

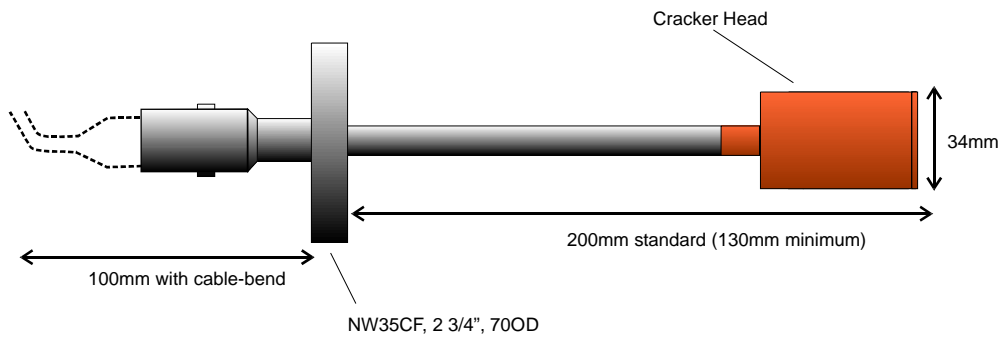
The highly efficient catalytic nature of the instrument enables a substantially lower operating temperature (<1000C), requiring minimal power (<60W) to achieve substantial dissociation (>70%). This is in sharp contrast to Tungsten filament cracker designs which are incompatible with reactive gases and 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 employing a NW35CF flange.



MGC-75



MGC-75

Mounting flange	NW35CF
In-vacuum length	200mm (standard)
In-vacuum diameter	34mm
Max Power required for optimum cracking	75W
Gas Flow	0-1 sccm
Cracking efficiency	Up to 90% (Hydrogen)
Cooling	Water (0.5 l/min required)

Accessories

Manual Teardrop Shutter,

Automated TeardropShutter.



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