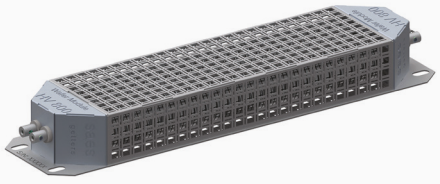
HV 800 Wafer Module



The HV 800 Wafer Module is a flangeless high performance NEG pump solution suited for several vacuum applications requiring the distribution of large pumping speeds and capacity for H_2 and all the active gases (i.e., H_2O, O_2, N_2, CO, CO_2). The module consists of a stainless steel structure made of SS316L hosting two stacks of sintered Non Evaporable Getter (NEG) disks. Two built-in heaters allow for the activation and the operation in warm conditions (~ 200 °C) of the module. The NEG disks are made of the new ZAO1 getter alloy. Thanks to the flexibility of the ZAO1 technology, the benefits of NEG pumping can be extended to the high vacuum regime ($1 \bullet 10^{-9}$ Torr to $1 \bullet 10^{-7}$ Torr).

The HV 800 Wafer Module presents also significant pumping speed for hydrocarbon species. Operating it at approximately 200 °C, the hydrocarbon species can be dissociated on the surface of the ZAO1 sintered disks and partially diffused into the bulk. As a result, the HV 800 Wafer Module can distribute large pumping speeds for H_2, all active gases and hydrocarbon species in vacuum systems characterized by large gas loads with minimum power requirement (30W at 200 °C). The two heaters are connected in series by electrical bridge connection. The bridges can be removed in the case the two stacks of ZAO disks must be activated in parallel. The electrical parameters reported in the table are recommended when the modules is at least 15 cm far from the front wall. If a more screened configuration is used or several modules are installed close to each other, the electrical parameters can be evaluated.

More NEG modules can be powered at the same time by series and/or parallel connection. Recommendation on the best electrical parameters and installation of the modules can be given on request.

HV 800 Wafer Module with thermocouple are also available.

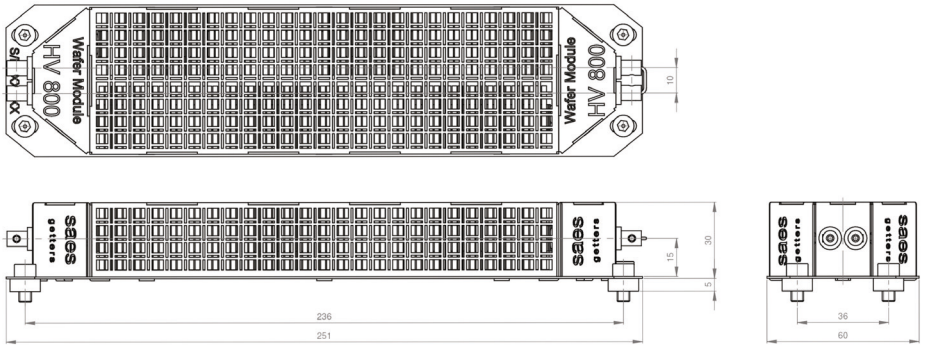
HIGHLIGHTS

General Features

- High pumping speed for all active gases
- High sorption capacity and increased lifetime
- Constant pumping speed in HV, UHV and XHV
- Reversible pumping of hydrogen and its isotopes
- Operation in the presence of high magnetic fields
- Oil free and vibration free
- Low weight
- Fast pumpdown after air venting and without baking
- Capable of coping with large air leaks
- Suitable for viton sealed systems

Applications

- Improving ultimate vacuum in combination with ion, diffusion, cryogenic or turbomolecular pumps
- Surface analysis systems
- Particle accelerators, synchrotron radiation sources and related equipment
- Process pumps for vacuum devices and deposition chambers
- Thin films deposition systems
- Portable vacuum instrumentation
- Pumping, storing and releasing hydrogen isotopes
- Impurities removal in rare gas filled devices



Dimension in mm

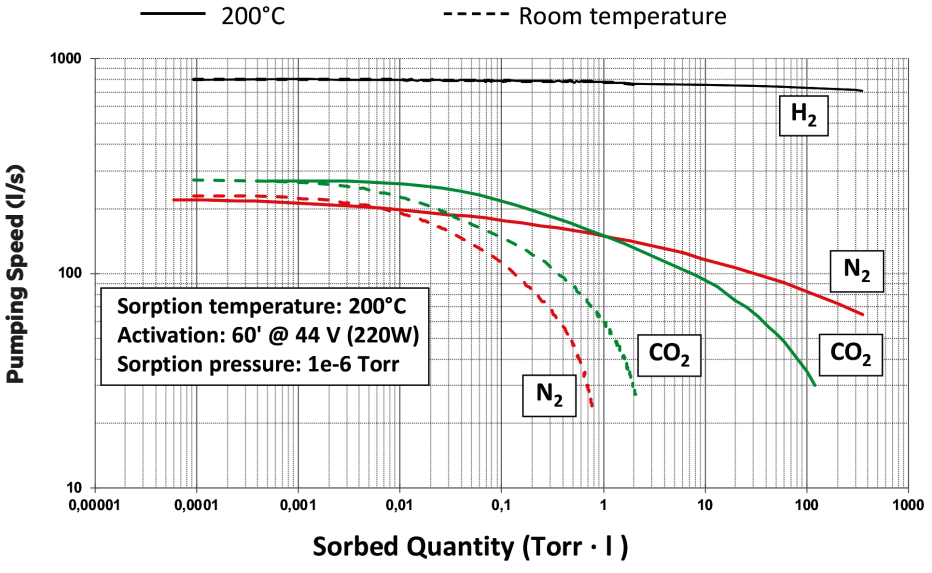
Ordering Information		
Product	**Product description**	**Code**
NEG ZAO1 module for high vacuum	HV 800 wafer module	5H0700
Power supply	NEG POWER C1	3B0501
Output cable	OUTPUT CABLE WAFER MODULE - 3 MT	3B8003
Flange-wafer module connecting cable	WAFER MODULE KIT OF CABLES	3B8002
Flange with feedthroughs	WAFER MODULE FLANGE CF35	3B8001

HV 800 Wafer Module

Typical of Module	Type of operation	Temperature	Electrical parameter
HV 800 WAFER MODULE	Activation	550° C	44 V (220 W)
	Working	200° C	12 V (30 W)

The parameters must be considered in nude configuration

HV800 Wafer Module sorption test (according to ASTM F798-97)



Typical Pump Characteristics		HV 800 Wafer Module
Alloy Type		ZAO®
Alloy Composition		Zr V Ti Al
Getter Mass (g)		525
Getter Surface (cm^2)		1560
Pumping Speed (l/s)@200 °C	H_2	800
	O_2	370
	CO_2	270
	N_2	220
Sorption Capacity (Torr•l)	H_2	10500
	O_2 Single run at 200 °C	500
	CO_2 Single run at 200 °C	120
	N_2 Single run at 200 °C	500
Number of runs (sorption cycles)		>20

Note: Pumping speed data refer to the initial values with the module installed on a flat surface.
The "Single run" capacity is intended as the recommended absorbed quantity per run allowing to perform more than 20 sorption cycles at 1e-6 Torr. In case of operation under much lower gas loads or at RT, the module can be reactivated 100 times or more.

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