

# NEXTorr®

## D 1000-10



### HIGHLIGHTS

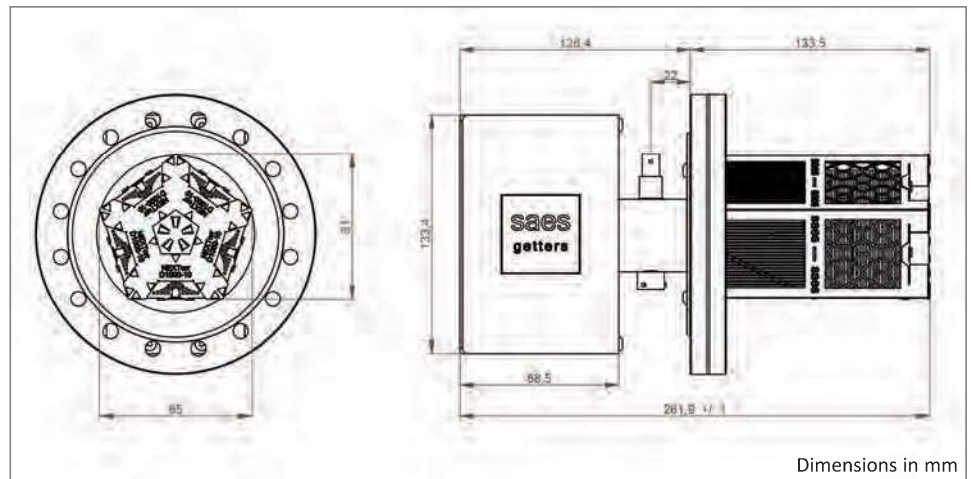
#### General Features

- High pumping speed for all active gases
- Pumping speed for noble gases and methane
- Constant pumping speed for active gases in UHV-XHV
- No intrinsic pressure limitations
- Minimal power requirement during operations
- Extremely compact and light pump
- Reduced magnetic interference
- Able to measure pressure lower than  $10^{-9}$  mbar

#### Applications

- Improvement of the ultimate vacuum in UHV-XHV systems
- Reduction of the footprint and weight of vacuum systems
- Scanning /transmission electron microscopes
- Surface science equipments
- Portable analysers vacuum instrumentations
- General purpose UHV systems
- Particle accelerators, synchrotron radiation sources and related equipments

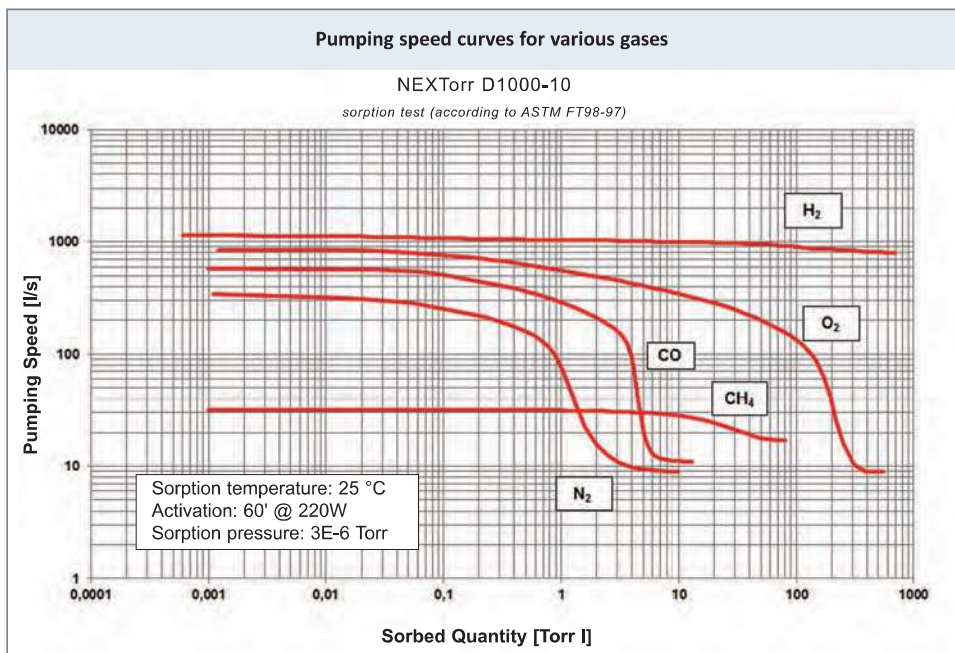
The NEXTorr® D 1000-10 is an extremely compact pump which integrates sputter ion pump (SIP) and NEG pump technologies with larger pumping speed and capacity to sorb gases very effectively down to the XHV level. The getter cartridge is made of porous sintered getter disks stacked in a highly efficient gas trapping structure featuring pumping speed in excess of 1000 l/s ( $H_2$ ). The cartridge is integrated into a CF 100 flange containing heating elements for the getter activation. After the activation is carried out ( $500^\circ C \times 1 h$ ), the NEG cartridge removes gases at room temperature without any need for electric power. On the other side of the same flange, an ion pump featuring 10 l/s for Ar and 20 l/s for  $CH_4$  is connected. Gas flows from the vacuum system to the ion pump through an optimized conductance. The optimized conductance and the special internal design of the ion pump allow the maximum exploitation of the ion pump sorption performance. The NEXTorr D1000-10 is very suitable for particle accelerator and synchrotron applications where larger pumping speed and capacity in a very compact pump package are required to keep UHV conditions or below. It is very suitable also for analytical equipment like surface science systems (XPS, UPS, STM, and so on), MBE and vacuum deposition systems.



Total pump weight (magnets included)	6.5 kg
Total pump volume	1.7 litre
Type of ion pump	Noble Diode
Operation Voltage Ion Element	5.0 kVdc
Operation Voltage NEG Element	50 Vdc

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# NEXTorr® D 1000-10



Initial pumping speed (l/s)	Gas	NEG activated	NEG saturated
	O <sub>2</sub>	850	9
	H <sub>2</sub>	1000	13
	CO	580	11
	N <sub>2</sub>	320	9
	CH <sub>4</sub>	32	17
	Argon <sup>1</sup>	10 (2.5)	10 (2.5)
Sorption capacity (Torr·l)	Gas	Single run capacity <sup>2</sup>	Total capacity <sup>3</sup>
	O <sub>2</sub>	150	>5000
	H <sub>2</sub>	1125	N/A <sup>4</sup>
	CO	4.3	>800
	N <sub>2</sub>	1.4	>110
NEG section	Getter alloy type		St 172
	Alloy composition		ZrVFe
	Getter mass (g)		112.5 g
	Getter surface (cm <sup>2</sup> )		950
ION section	Voltage applied		DC+5kV
	Number of Penning cells		18
	Standard bake-out temperature		150 °C

- <sup>1</sup> Measured at 3x10<sup>-6</sup> Torr. Unsaturated pump (saturated pump).
- <sup>2</sup> Capacity values with the NEG element at room temperature, corresponding to a drop of the pumping speed to 10% of its initial value.
- <sup>3</sup> Total capacity values for each single gas obtained after many reactivations (getter fully consumed). Capacity values for the various gases are not additive (a getter fully reacted with one gas specie will not sorb another gas).
- <sup>4</sup> After the getter element has reached its room temperature H<sub>2</sub> capacity (1125 Torr·l) it can be "regenerated". The regeneration process extracts the H<sub>2</sub> stored in the getter. After being regenerated, the pump can start pumping H<sub>2</sub> again.

## Ordering Information

Product	Product description	Code
NEXTorr PUMP	NEXTorr D 1000-10	5H0180
Pump power supply	NEXTorr PS NIOPS-06	3B0440
Power supply cables	NEXTorr KIT OF CABLES-04-06	3B0416
Power supply input cable	NIOPS INPUT CABLE	3B0398
Output cable ION element	NIOPS04-06-OUTPUT CABLE ION-3MT	3B0418
Output cable NEG element	NIOPS04-06-OUTPUT CABLE NEG-3MT	3B0419

The NEXTorr® product line incorporates and exploits the patented concept of a combined pumping system comprising a getter pump and an ion pump, and have global Intellectual Property Rights coverage with patents already granted in the US (8,287,247), Europe (2,409,034), Japan (5,372,239), China (102356236).

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SAES Group  
[www.saesgroup.com](http://www.saesgroup.com)  
[neg\\_technology@saes-group.com](mailto:neg_technology@saes-group.com)