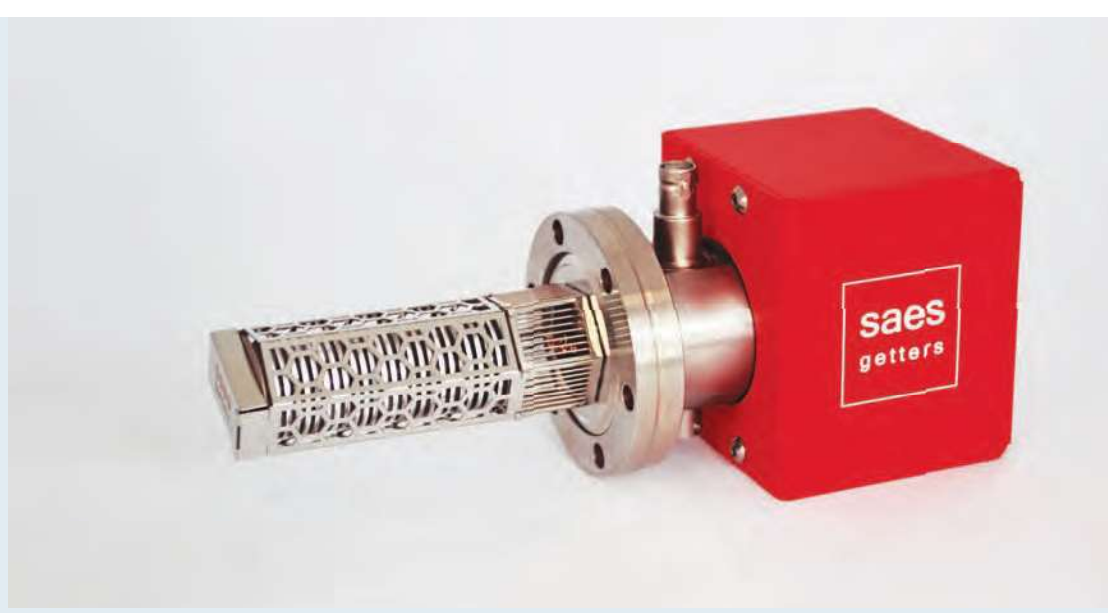


NEXTorr® D 200-5



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

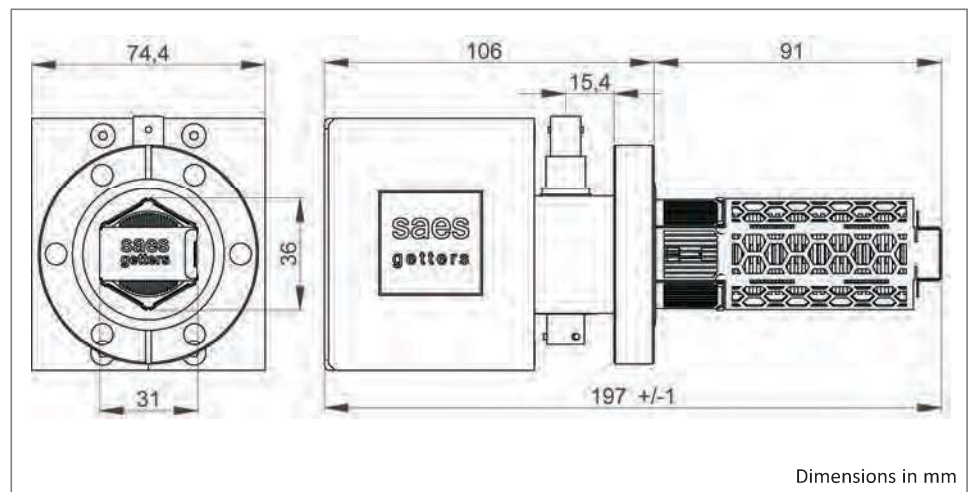
Applications

- 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 200-5 is an extremely compact pump able to sorb gases very effectively and with large capacity down to the XHV level.

The getter cartridge is made of porous sintered getter disks (St 172) stacked in a highly efficient gas trapping structure featuring pumping speed in excess of 200 l/s (H₂). The cartridge is integrated into a CF 35 flange containing a heating element for the getter activation. After the activation is carried out (500 °C x 1 h), the pump removes gases at room temperature without any need for electric power to operate. On the other side of the same flange, a diode ion pump featuring 6 l/s (Ar) 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 configuration of the ion pump with respect of the getter cartridge provides additional pumping synergies. Gases released by the ion pump during the operation, are intercepted and removed by the getter element, with a substantial reduction of back-streaming effects. For the same reasons, increased pumping efficiency for H₂ and CH₄ are obtained. Fine titanium particles which are known to be continuously emitted by ion pumps during operation are also effectively trapped by the getter element, reducing potential contamination of the vacuum system.

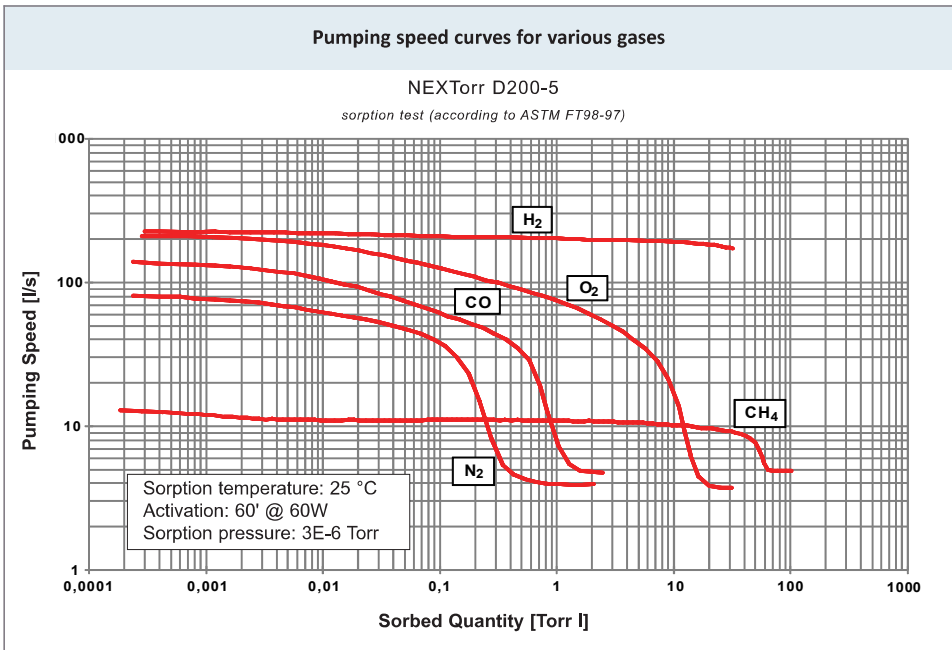


Dimensions in mm

| | |
|--------------------------------------|-----------|
| Total pump weight (magnets included) | 2.2 kg |
| Total pump volume | 0.5 litre |
| Type of ion pump | Diode |
| Operation Voltage Ion Element | 5.0 kVdc |
| Operation Voltage NEG Element | 12 Vdc |

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NEXTorr® D 200-5



| Initial pumping speed (l/s) | Gas | NEG activated | NEG saturated |
|-----------------------------|-----------------------------------|----------------------------------|---------------------------------------|
| | O ₂ | 200 | 4 |
| | H ₂ | 200 | 6 |
| | CO | 140 | 5 |
| | N ₂ | 80 | 4 |
| | CH ₄ | 13 | 5 |
| | Argon ¹ | 6 (0.3) | 6 (0.3) |
| Sorption capacity (Torr·l) | Gas | Single run capacity ² | Total capacity ³ |
| | O ₂ | 9 | >1000 |
| | H ₂ | 280 | N/A ⁴ |
| | CO | 0.8 | >240 |
| | N ₂ | 0.3 | >50 |
| | CH ₄ | 55 | 50,000 hours at 10 ⁻⁶ Torr |
| NEG section | Getter alloy type | | St 172 |
| | Alloy composition | | ZrVFe |
| | Getter mass (g) | | 28 g |
| | Getter surface (cm ²) | | 238 |
| ION section | Voltage applied | | DC+5kV |
| | Number of Penning cells | | 4 |
| | Standard bake-out temperature | | 150 °C |

- 1 Measured at 3x10⁻⁶ Torr. Unsaturated pump (saturated pump).
- 2 Capacity values with the NEG element at room temperature, corresponding to a drop of the pumping speed to 10% of its initial value. A drop to 50% has been considered in the case of CH₄.
- 3 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).
- 4 After the getter element has reached its room temperature H₂ capacity (280 Torr·l) it can be "regenerated". The regeneration process extracts the H₂ stored in the getter. After being regenerated, the pump can start pumping H₂ again.

Ordering Information

| Product | Product description | Code |
|--------------------------|------------------------------|--------|
| NEXTorr PUMP | NEXTorr D 200-5 | 5H0170 |
| Pump power supply | NEXTorr PS NIOPS-03 | 3B0408 |
| Power supply cables | NEXTorr KIT OF CABLES-03 | 3B0409 |
| Power supply input cable | NIOPS INPUT CABLE | 3B0398 |
| Output cable ION element | NIOPS03-OUTPUT CABLE ION-3MT | 3B0410 |
| Output cable NEG element | NIOPS03-OUTPUT CABLE NEG-3MT | 3B0411 |

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
neg_technology@saes-group.com