

# NEXTorr® D 100-5



## 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

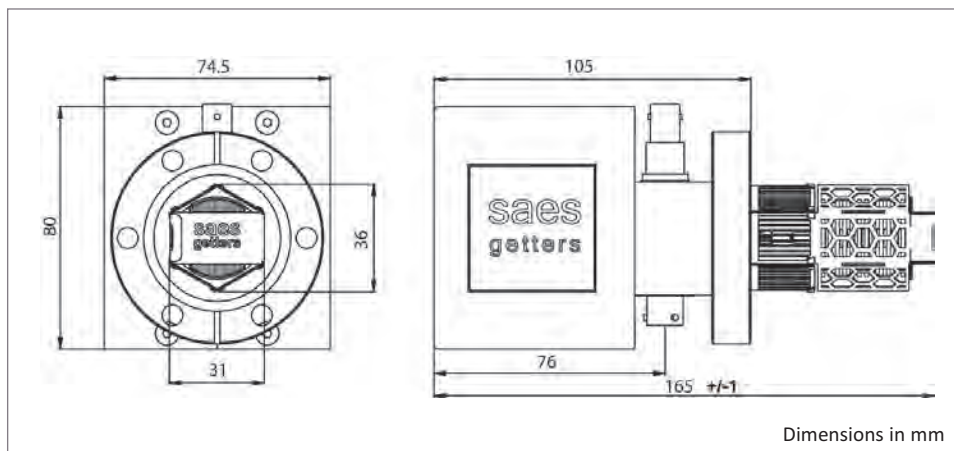
### Applications

- 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 100-5 is an extremely compact pump able to sorb gases very effectively and with large capacity down to the XHV level.

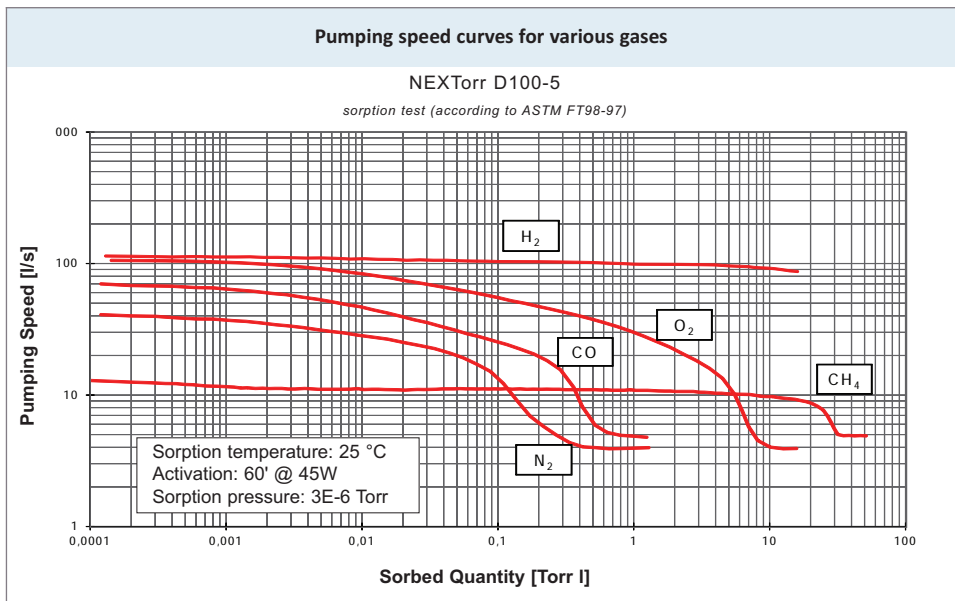
The getter cartridge is made of porous sintered getter disks (St 172) stacked in a highly efficient gas trapping structure featuring pumping speed in excess of 100 l/s (H<sub>2</sub>). The cartridge is integrated into a CF 35 flange containing a heating element for the getter activation. After the activation 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 H<sub>2</sub> and CH<sub>4</sub> 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.



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	9.0 Vdc

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Initial pumping speed (l/s)	Gas	NEG activated	NEG saturated
	O <sub>2</sub>	100	4
	H <sub>2</sub>	100	6
	CO	70	5
	N <sub>2</sub>	40	4
	CH <sub>4</sub>	15	5
	Argon <sup>1</sup>	6 (0.3)	6 (0.3)
Sorption capacity (Torr·l)	Gas	Single run capacity <sup>2</sup>	Total capacity <sup>3</sup>
	O <sub>2</sub>	5	>500
	H <sub>2</sub>	135	N/A <sup>4</sup>
	CO	0.6	>120
	N <sub>2</sub>	0.3	>25
	CH <sub>4</sub>	30	50,000 hours at 10 <sup>-6</sup> Torr
NEG section	Getter alloy type		St 172
	Alloy composition		ZrVFe
	Getter mass (g)		13.5 g
	Getter surface (cm <sup>2</sup> )		114
ION section	Voltage applied		DC+5kV
	Number of Penning cells		4
	Standard bake-out temperature		150 °C

- Measured at 3x10<sup>-6</sup> Torr. Unsaturated pump (saturated pump).
- 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 CH<sub>4</sub>.
- 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).
- After the getter element has reached its room temperature H<sub>2</sub> capacity (135 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 100-5	5H0169
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

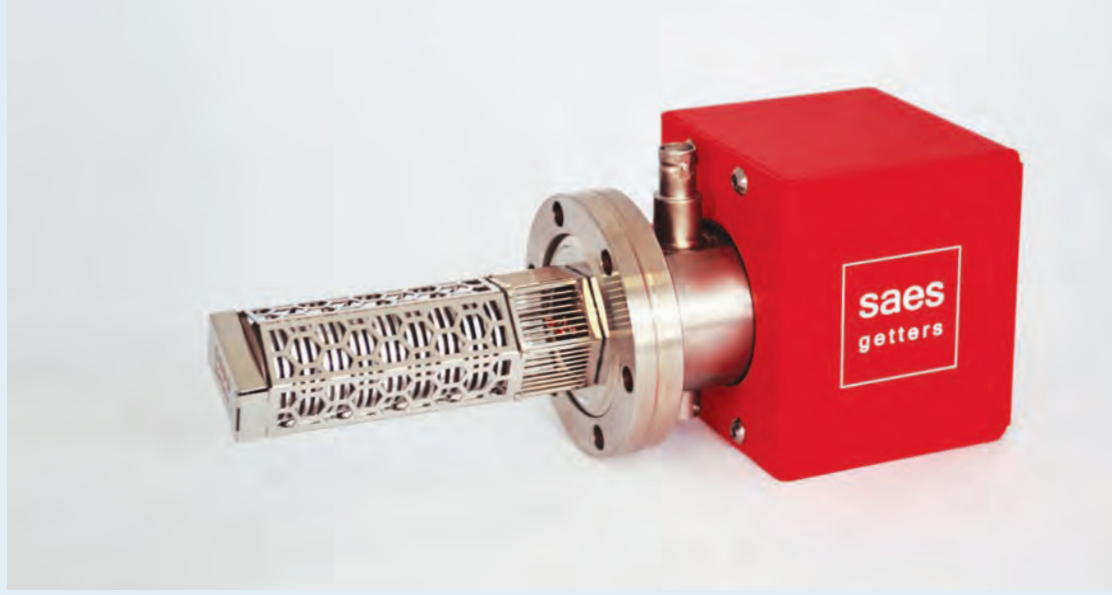
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The NEXTorr® product line incorporates and exploits the patented concept of a combined pumping system comprising a getter pump and an ion pump, and have global Intellectual Property Rights coverage with patents already granted in the US (8,287,247),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

# 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

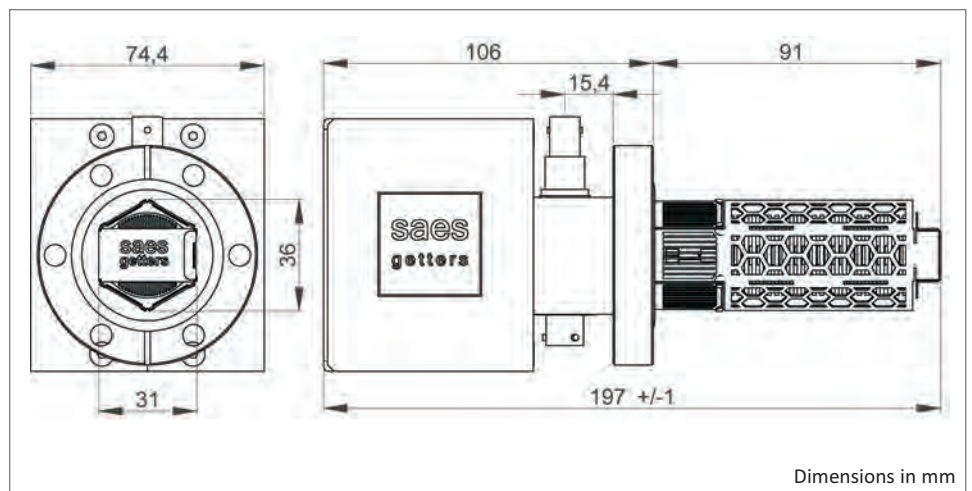
### Applications

- 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 ( $H_2$ ). The cartridge is integrated into a CF 35 flange containing a heating element for the getter activation. After the activation is carried out ( $500\text{ °C} \times 1\text{ h}$ ), 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.

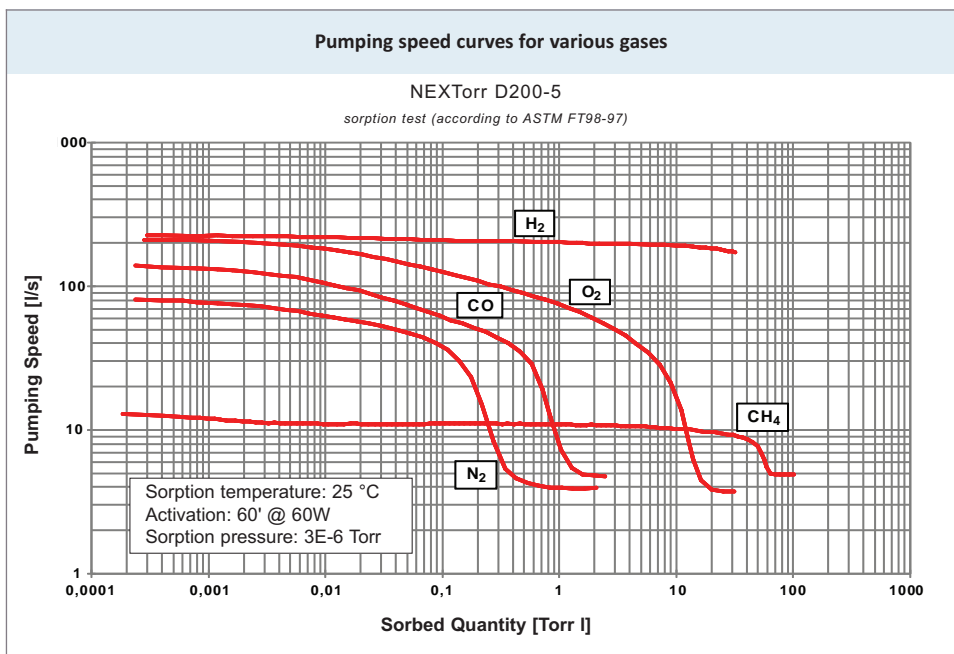
The configuration of the ion pump with respect of the getter cartridge provides additional pumping synergies. Gases released by the ion pump during the operation, are intercepted and removed by the getter element, with a substantial reduction of back-streaming effects. For the same reasons, increased pumping efficiency for  $H_2$  and  $CH_4$  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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Initial pumping speed (l/s)	Gas	NEG activated	NEG saturated
	O <sub>2</sub>	200	4
	H <sub>2</sub>	200	6
	CO	140	5
	N <sub>2</sub>	80	4
	CH <sub>4</sub>	13	5
	Argon <sup>1</sup>	6 (0.3)	6 (0.3)
Sorption capacity (Torr·l)	Gas	Single run capacity <sup>2</sup>	Total capacity <sup>3</sup>
	O <sub>2</sub>	9	>1000
	H <sub>2</sub>	280	N/A <sup>4</sup>
	CO	0.8	>240
	N <sub>2</sub>	0.3	>50
	CH <sub>4</sub>	55	50,000 hours at 10 <sup>-6</sup> Torr
NEG section	Getter alloy type		St 172
	Alloy composition		ZrVFe
	Getter mass (g)		28 g
	Getter surface (cm <sup>2</sup> )		238
ION section	Voltage applied		DC+5kV
	Number of Penning cells		4
	Standard bake-out temperature		150 °C

- 1 Measured at 3x10<sup>-6</sup> 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 CH<sub>4</sub>.
- 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 H<sub>2</sub> capacity (280 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 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

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# NEXTorr® D 300-5



## 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

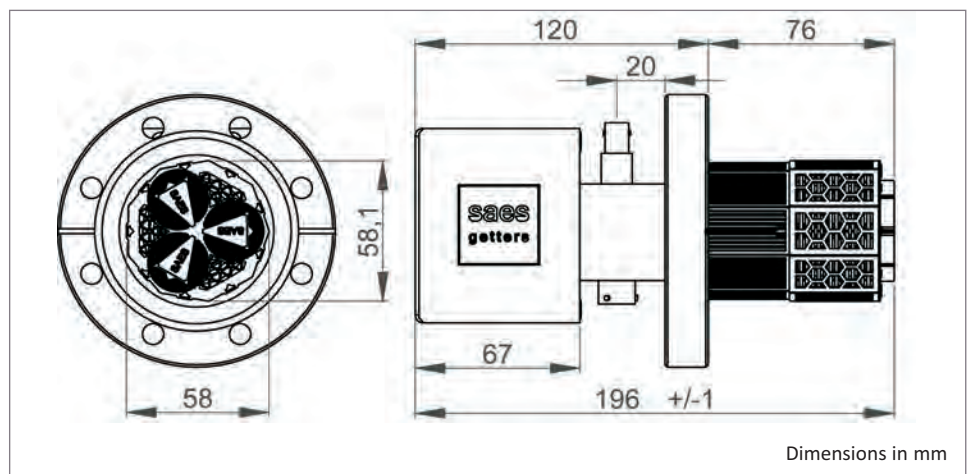
### Applications

- 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 300-5 is an extremely compact pump able to sorb gases very effectively and with large capacity down to the XHV level.

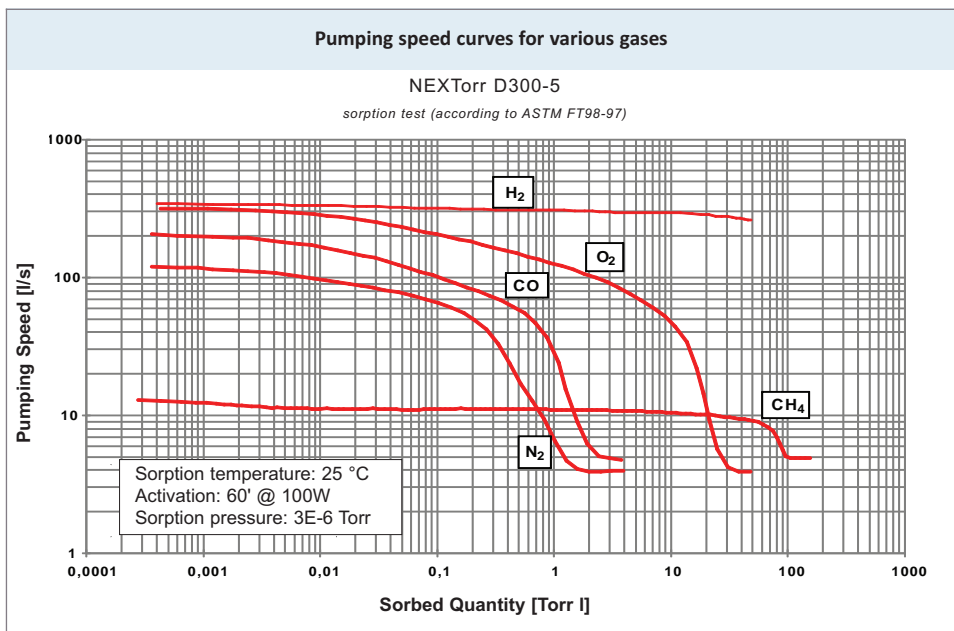
The getter cartridge is made of porous sintered getter disks (St 172) stacked in a highly efficient gas trapping structure featuring pumping speed in excess of 300 l/s (H<sub>2</sub>). The cartridge is integrated into a CF 63 flange containing a heating element for the getter activation. After the activation 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 H<sub>2</sub> and CH<sub>4</sub> 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)	3.1 kg
Total pump volume	0.6 litre
Type of ion pump	Diode
Operation Voltage Ion Element	5.0 kVdc
Operation Voltage NEG Element	20 Vdc



Initial pumping speed (l/s)	Gas	NEG activated	NEG saturated
	O <sub>2</sub>	300	4
	H <sub>2</sub>	300	6
	CO	200	5
	N <sub>2</sub>	100	4
	CH <sub>4</sub>	13	5
	Argon <sup>1</sup>	6 (0.3)	6 (0.3)
Sorption capacity (Torr·l)	Gas	Single run capacity <sup>2</sup>	Total capacity <sup>3</sup>
	O <sub>2</sub>	13	>1500
	H <sub>2</sub>	410	N/A <sup>4</sup>
	CO	1.1	>360
	N <sub>2</sub>	0.6	>75
	CH <sub>4</sub>	82	50,000 hours at 10 <sup>-6</sup> Torr
NEG section	Getter alloy type		St 172
	Alloy composition		ZrVFe
	Getter mass (g)		41 g
	Getter surface (cm <sup>2</sup> )		342
ION section	Voltage applied		DC+5kV
	Number of Penning cells		4
	Standard bake-out temperature		150 °C

- Measured at 3x10<sup>-6</sup> Torr. Unsaturated pump (saturated pump).
- 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 CH<sub>4</sub>.
- 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).
- After the getter element has reached its room temperature H<sub>2</sub> capacity (410 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 300-5	5H0171
Pump power supply	NEXTorr PS NIOPS-04	3B0415
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 - 3 MT	3B0418
Output cable NEG element	NIOPS04-06 - OUTPUT CABLE NEG - 3 MT	3B0419

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D.VS.108.6.16



# NEXTorr® D 500-5



## 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

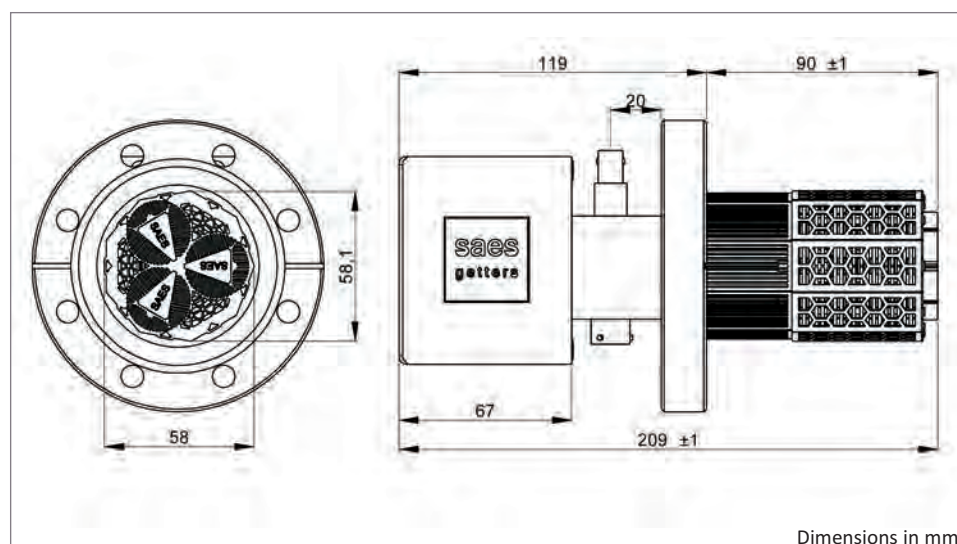
### Applications

- 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 500-5 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 500 l/s ( $H_2$ ). The cartridge is integrated into a CF 63 flange containing a heating element for the getter activation. After the activation is carried out ( $500^\circ C \times 1 h$ ), 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.

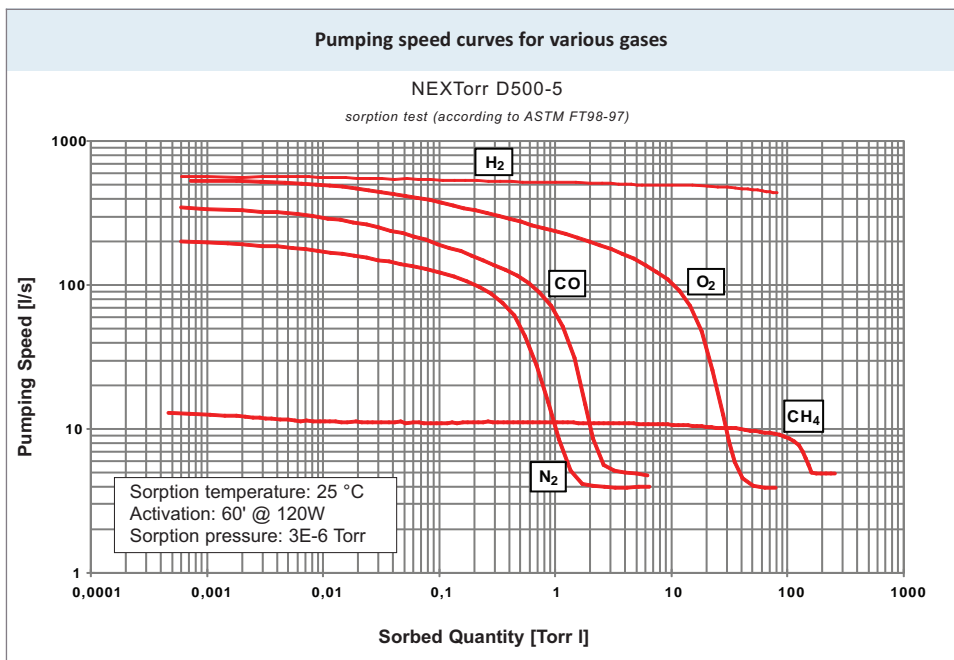
The configuration of the ion pump with respect of the getter cartridge provides additional pumping synergies. Gases released by the ion pump during the operation, are intercepted and removed by the getter element, with a substantial reduction of back-streaming effects. For the same reasons, increased pumping efficiency for  $H_2$  and  $CH_4$  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)	3.1 kg
Total pump volume	0.7 litre
Type of ion pump	Diode
Operation Voltage Ion Element	5.0 kVdc
Operation Voltage NEG Element	24 Vdc





Initial pumping speed (l/s)	Gas	NEG activated	NEG saturated
	O <sub>2</sub>	500	4
	H <sub>2</sub>	500	6
	CO	340	5
	N <sub>2</sub>	200	4
	CH <sub>4</sub>	13	5
	Argon <sup>1</sup>	6 (0.3)	6 (0.3)
Sorption capacity (Torr-l)	Gas	Single run capacity <sup>2</sup>	Total capacity <sup>3</sup>
	O <sub>2</sub>	17	>2500
	H <sub>2</sub>	680	N/A <sup>4</sup>
	CO	1.4	>600
	N <sub>2</sub>	0.8	>125
	CH <sub>4</sub>	137	50,000 hours at 10 <sup>-6</sup> Torr
NEG section	Getter alloy type		St 172
	Alloy composition		ZrVFe
	Getter mass (g)		68 g
	Getter surface (cm <sup>2</sup> )		570
ION section	Voltage applied		DC+5kV
	Number of Penning cells		4
	Standard bake-out temperature		150 °C

- 1 Measured at 3x10<sup>-6</sup> 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 CH<sub>4</sub>.
- 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 H<sub>2</sub> capacity (680 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 500-5	5H0172
Pump power supply	NEXTorr PS NIOPS-04	3B0415
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 - 3 MT	3B0418
Output cable NEG element	NIOPS04-06 - OUTPUT CABLE NEG - 3 MT	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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# NEXTorr® D 1000-10



## HIGHLIGHTS

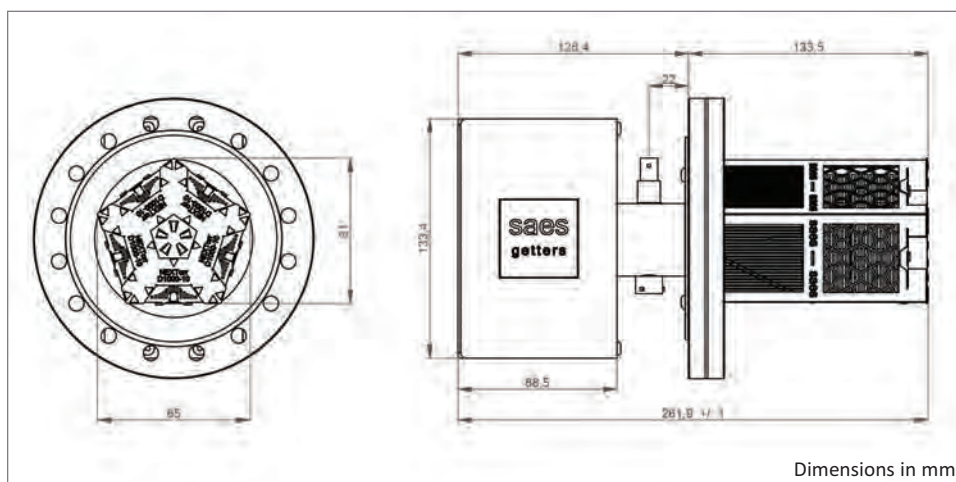
### General Features

- 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

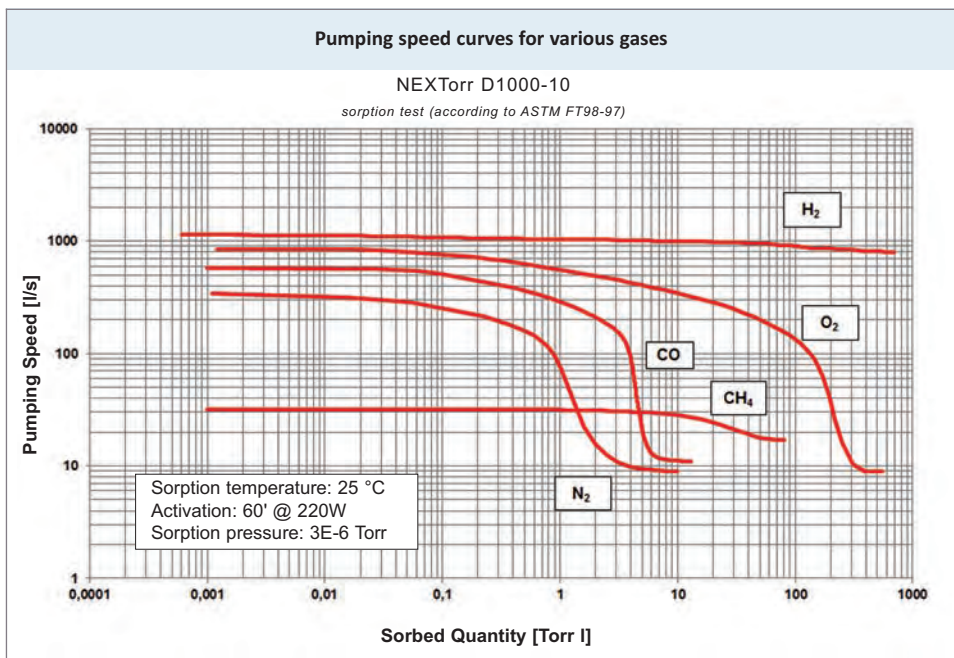
### Applications

- 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<sub>2</sub>). The cartridge is integrated into a CF 100 flange containing heating elements for the getter activation. After the activation is carried out (500°C x 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<sub>4</sub> 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



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

- 1 Measured at 3x10<sup>-6</sup> 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.
- 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 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

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# NEXTorr® D 2000-10



## HIGHLIGHTS

### General Features

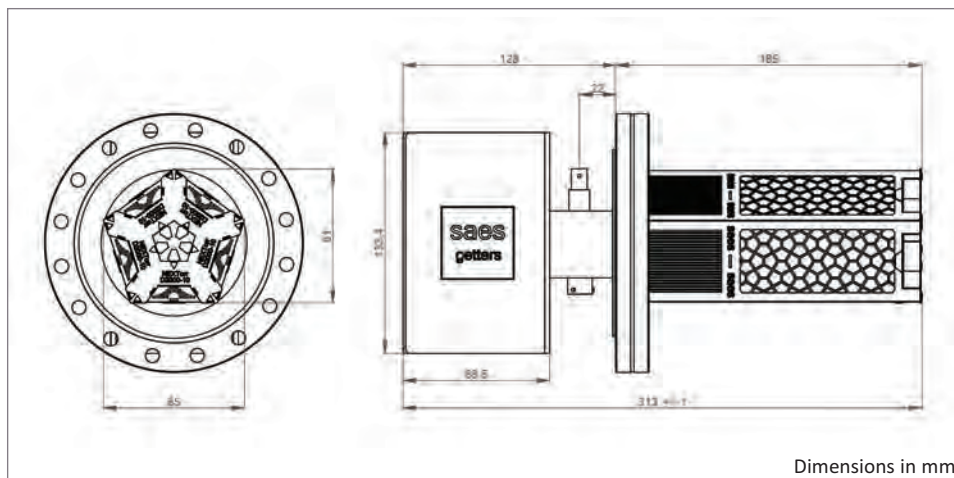
- High pumping speed for all active gases
- Pumping speed for noble gases and methane
- Constant pumping speed for active gases in UHV-XHV
- No intrinsic pressure limitations
- Minimal power requirement during operations
- Extremely compact and light pump
- Reduced magnetic interference
- Able to measure 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

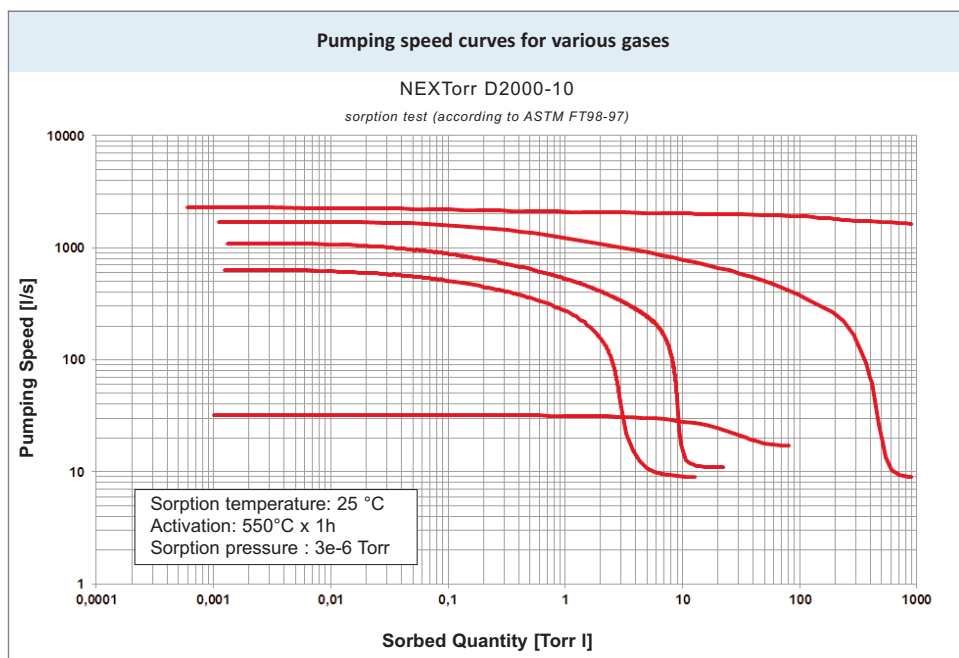
The NEXTorr® D 2000-10 is an extremely compact pump which integrates sputter ion pump (SIP) and NEG pump technologies with larger pumping speed and capacity to sorb gases very effectively down to the XHV level. The getter cartridge is made of porous sintered getter disks stacked in a highly efficient gas trapping structure featuring pumping speed in excess of 2000 l/s (H<sub>2</sub>). The cartridge is integrated into a CF 100 flange containing heating elements for the getter activation. After the activation is carried out (500°C x 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<sub>4</sub> 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 D2000-10 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)	6.8 kg
Total pump volume	1.8 litre
Type of ion pump	Noble Diode
Operation Voltage Ion Element	5.0 kVdc
Operation Voltage NEG Element	110 Vdc

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Initial pumping speed (l/s)	Gas	NEG activated	NEG saturated
	O <sub>2</sub>	1700	9
	H <sub>2</sub>	2000	13
	CO	1100	11
	N <sub>2</sub>	640	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>	300	>10000
	H <sub>2</sub>	2250	N/A <sup>4</sup>
	CO	8	>1600
	N <sub>2</sub>	2.8	>220
NEG section	Getter alloy type		St 172
	Alloy composition		ZrVFe
	Getter mass (g)		225 g
	Getter surface (cm <sup>2</sup> )		1900
ION section	Voltage applied		DC+5kV
	Number of Penning cells		18
	Standard bake-out temperature		150 °C

- 1 Measured at 3x10<sup>-6</sup> 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.
- 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 H<sub>2</sub> capacity (2250 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

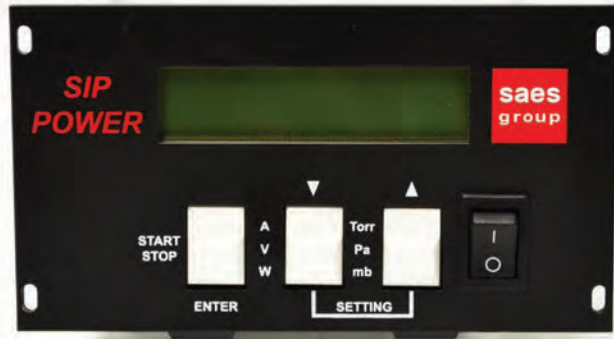
Product	Product description	Code
NEXTorr PUMP	NEXTorr D 2000-10	5H0181
Pump power supply	NEXTorr PS NIOPS-06	3B0440
Power supply cables	NEXTorr KIT OF CABLES-04-06	3B0416
Power supply input cable	NIOPS INPUT CABLE	3B0398
Output cable ION element	NIOPS04-06-OUTPUT CABLE ION-3MT	3B0418
Output cable NEG 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).

The SAES Group manufacturing companies are ISO9001 certified, the Asian and Italian companies are also ISO14001 certified. Full information about our certifications for each company of the Group is available on our website at: [www.saesgroup.com](http://www.saesgroup.com)

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# SIP POWER Controller



## HIGHLIGHTS

### Line Voltage

- 24Vdc +/-20%
- 110/240 Vac 50/60 Hz
- Maximum input current 2.0 Adc

### High voltage output

- Voltage 600Vdc – 6KVdc
- Maximum current to the pump 65mAmax @ 350Vdc
- Fixed maximum value
- Maximum peak current 3.0 Apk @ 6KV
- Instrument Protection

### Dimensions

- 70x127x230 (HxWxD)
- sub-rack 3U 14TE 230mm deep

### Weight

- 1,3 kg

### Main features

- Remote control through RS485 with Modbus protocol (RTU)
- Remote control through standard Ethernet interface
- Up to 128 SIP Power units can be simultaneously controlled

## SIP POWER Controller

The SIP POWER controls the NEXTorr ion pump modules. The controller features an internal system for measuring the ionization current along with an autoranging system. The current (in nA) can be communicated with an external device through a serial interface. The voltage can also be communicated with an external device. Up to 128 SIP Power units can be simultaneously controlled through LAN using a dedicated program.

The SIP Power is protected by two security features: the SAFE connector and the INTERLOCK.

### Features:

- SAFE connector and INTERLOCK
- Optional alphanumeric display
- Status LEDs and an RS485 interface on the version without the alphanumeric display

### Data interface:

- Remote control through Ethernet
- Recording of the device parameters via USB
- Remote control through RS485 (only available in the version without alphanumeric display)

Ordering Information	
Product description	Code
SIP POWER*	3B0506
SIP POWER LEDES RS485**	3B0509
NIOPS03-OUTPUT CABLE ION-3MT***	3B0410

\*with display

\*\*without alphanumeric display

\*\*\*other cable lengths available upon request

# NIOPS Controller



## HIGHLIGHTS

### Electrical Characteristics:

#### ION module

- Nominal output voltage: 5 kV±2 %
- Range of adjustment: 1.2÷6 kV
- Output voltage polarity: Positive
- Input current: 1 x 18.5/9 A
- Maximum output current: 89.9 mA
- Obtainable output power: 25–30 W

#### NEG module

- Output power Activation mode (45–280) W

#### Instrument Protection

- Internal line fuse : 2A T

#### Weight

- (3–4.5) kg

#### Dimensions

- 129x198x334 (HxWxD)

#### Main Features

- Remote control by RS232 interface with ASCII protocol
- Remote control by RS485 interface with Modbus protocol (RTU)

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neg\_technology@saes-group.com

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## NIOPS Controller

The NIOPS is the controller for the NEXTorr pumps. The device consists of two power modules, controlling the ion pump (ION) as well as the Non-Evaporable Getter pump (NEG) modules of a NEXTorr pump.

Both modules are controlled by a microprocessor circuit and utilize a mutual line power module.

The two power units are able to operate independently. The NIOPS can be remotely controlled via the ASCII (RS232) and MODBUS RTU (RS485) serial communication protocols.

### ION module

The ion pump module of the NIOPS displays the pressure obtained by ionization current down to nA scale (i.e., down to 1e-10 Torr).

### NEG module

The NIOPS is designed for three modes of operation of the NEG pump portion of the NEXTorr:

- Activation
- Timed Activation
- Conditioning

Different NIOPS models (NIOPS-03, NIOPS-04, and NIOPS-06) are available for operating the six NEXTorr pumps.

Ordering Information		
Product description	Code	
Power supply NEXTorr D100-5 & NEXTorr D200-5	NEXTorr PS NIOPS-03	3B0408
Power Supply cables NEXTorr D100-5 & NEXTorr D200-5*	NEXTorr KIT of Cables-03	3B0409
Power supply NEXTorr D300-5 & NEXTorr D500-5	NEXTorr PS NIOPS-04	3B0415
Power Supply NEXTorr D1000-10 & NEXTorr D2000-10	NEXTorr PS NIOPS-06	3B0440
Power Supply cables NEXTorr D300-5, NEXTorr D500-5 NEXTorr D1000-10 & NEXTorr D2000-10*	NEXTorr KIT of Cables-04-06	3B0416

*\*Cables for the control of the ION and NEG elements of the NEXTorr pump, as well as the main input cable are available separately as well as in kits. The standard cables are 3 m long; other lengths available upon request.*

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