

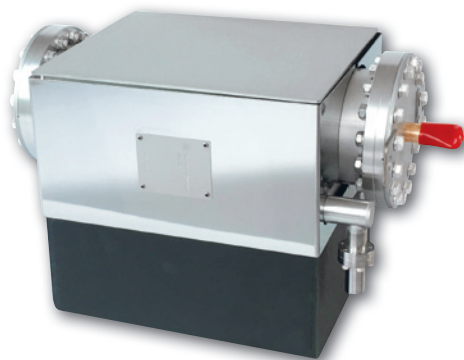
## New Agilent Ion CombiNEG 150-1000 and 150-2000

### The Perfect Partnership Between UHV Leaders

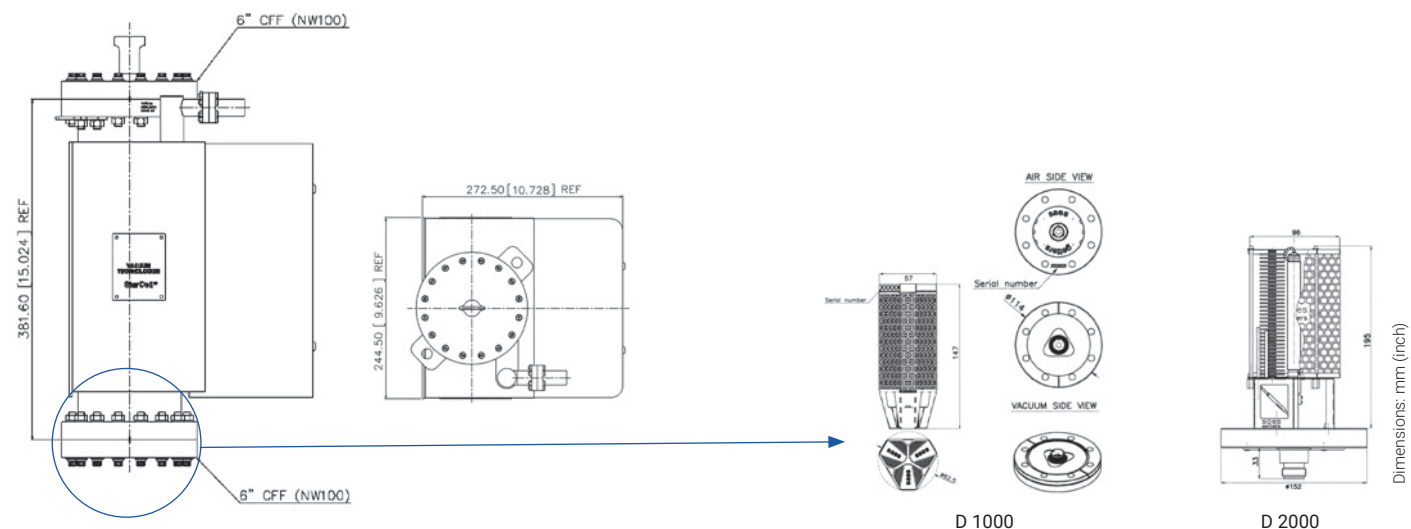
The Agilent Ion CombiNEG pumps are the result of the more than 100 years' combined vacuum experience of Agilent Technologies and SAES GETTERS. Agilent (formerly Varian Vacuum) is the inventor of the ion pump, and SAES the originator of the NEG pump concept.

The Ion CombiNEG pumps combine the state-of-the-art Agilent Ion StarCell pump with the SAES NEG cartridge. These new pumps provide optimum pumping speed for getterable gases, methane, and noble gases and reach pressure values as low as  $10^{-12}$  mbar.

The easy insertion of the NEG cartridge into the ion pump makes the Ion CombiNEG pump a smart solution, combining ion pump and NEG cartridge technologies in the same pump volume.

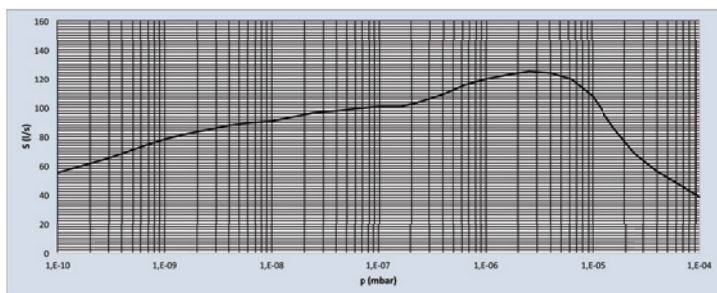


## Outline Drawings



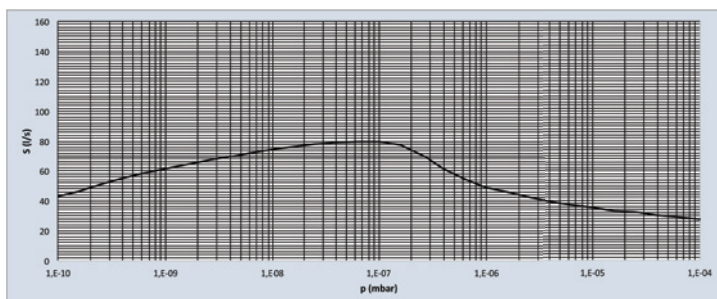
D 1000 Cartridge, and D 2000 Cartridge  
to be inserted into CombiNEG pump

## Pumping Speed - Ion CombiNEG 150-1000 and 150-2000 - StarCell, Nitrogen



Typical pumping speed vs pressure diagram for Nitrogen  
(Ion Pump only, StarCell, saturated, equipped with shield))

## Pumping Speed - Ion CombiNEG 150-1000 and 150-2000 - StarCell, Argon



Typical pumping speed vs pressure diagram for Argon  
(Ion Pump only, StarCell, saturated, equipped with shield))

## Technical Specifications

Specifications		
Nominal saturated pumping speed for Nitrogen (L/s) with shield		125
Nominal saturated pumping speed for Argon (L/s) with shield		80
Operating life at 1E-6 mbar (hours)		80,000
Max starting current		300 mA
Max baking current		25 mA
Protect current		50 mA
Operating voltage (max)		-7000 Vdc +/- 10 %
Maximum starting pressure (mbar)		$\leq 1 \times 10^{-3}$
Ultimate pressure (mbar)		Below $10^{-11}$
Inlet flange		6" CFF (NW 100) AISI 304 ESR
Side port		6" CFF (NW 100)
Internal volume (litres)		12.1
Maximum baking temperature (°C)		350
Temperature limits (°C):		
Pump without magnets		400
Pump with magnets		350
Flange		500
Getter Pump		(*)
Material:	Body	AISI 304 SST
	Cathodes	Titanium
	Anodes	AISI 304 SST
	Magnets	Ferrite
Weight, lbs (kg)		94 (43)

(\*) Refer to the Operating Instructions Manual provided with the getter pump

## NEG Cartridges

The Ion CombiNEG 150-1000 and 150-2000 have a side port CFF 6" that is suitable to accommodate a SAES CapaciTorr D 1000 or D 2000 getter pumps.

The CapaciTorr D 1000 and D 2000 pumps use the high performing SINTERED St 172 (Zr-V-Fe) material in the form of disks to achieve high pumping performances in a very compact configuration. A dedicated power supply is needed for the D 1000 or D 2000 pumps.

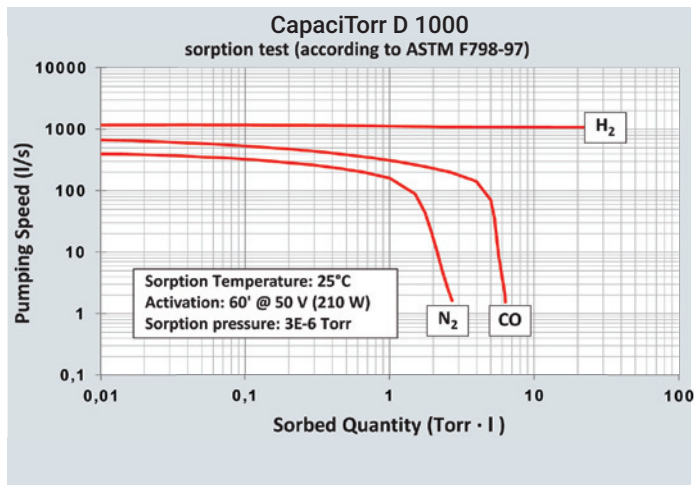


D 1000 Cartridge

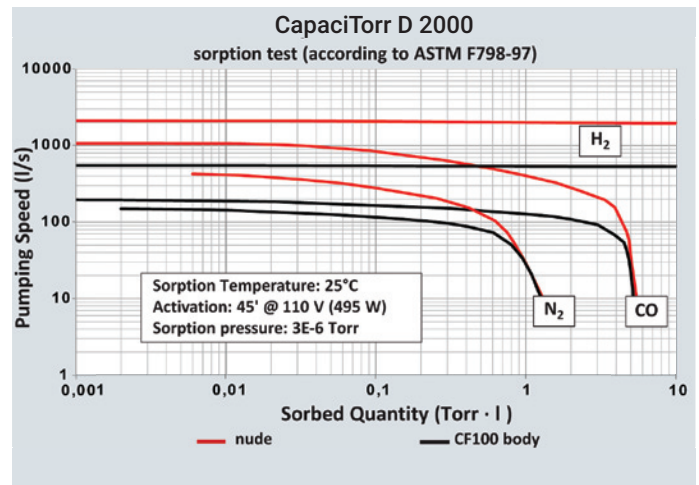


D 2000 Cartridge

### D 1000 Pumping speed

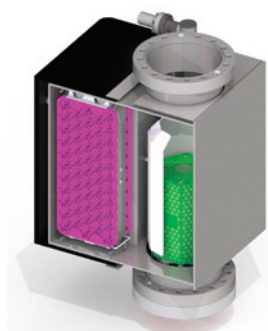
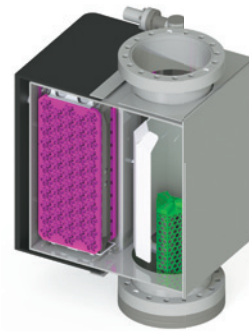


### D 2000 Pumping speed



## Technical Specifications

Typical Pump Characteristics		D 1000	D 2000
Alloy Type		St 172	St 172
Alloy Composition		ZrVFe	ZrVFe
Getter Mass (g)		136	225
Getter Surface (cm <sup>2</sup> )		1140	1900
Pumping Speed (L/s)	H <sub>2</sub>	1000	2000
	CO	600	1000
Sorption Capacity (Torr • l)	H <sub>2</sub>	1360	2250
	CO at 25 °C	4	5
	CO total	1224	2000
Cartridge Controller Characteristics			
Input			
Maximum power		3.5 kW	
Supply voltage		110-220 V <sub>AC</sub>	
Frequency		50-60 Hz	
Input current		20 A / 110 Vac - 14 A / 230 Vac	
Noise at 1 mt		< 40 dBA	
Mains cord connector		IEC Type 16A 250V	
Output 1-4 at 110 V			
Output power		700 W+overload	
Output voltage		0-110 V <sub>DC</sub>	
Overload		110% for one minute	
Supply current		10 A	



Cut-aways showing the main pump assembly of the Ion CombiNEG 150-1000 and 150-2000 pumps (StarCell version), with the D 1000 and D 2000 getter pumps mounted.

## Ordering Information

### Ion CombiNEG 150-1000 and 150-2000 Pumps

Pumps	Part number
Ion CombiNEG 150-1000/2000 pump, StarCell, with heater, 120 V	X3606-64060
Ion CombiNEG 150-1000/2000 pump, StarCell, with heater, 230 V	X3606-64061

Note: Diode versions available on request

Cables and heaters	
HV radiation resistant cable, 4 m (13 ft), with interlock (for Fischer feedthrough)	9290705
HV radiation resistant cable, 7 m (23 ft), with interlock (for Fischer feedthrough)	9290707
HV radiation resistant cable, 10 m (33 ft), with interlock (for Fischer feedthrough)	9290708
HV radiation resistant cable, 20 m (66 ft), with interlock (for Fischer feedthrough)	9290709
Heater, Ion CombiNEG 150-1000 or 2000 pump, 120V, 160W	9190072
Heater, Ion CombiNEG 150-1000 or 2000 pump, 220V, 160W	9190073

For part numbers of cables with other feedthrough types, please refer to your local Agilent representative.

Controllers for Ion CombiNEG Pump	Part Number
<b>4UHV Controller*</b>	
200 W neg	9299010
200 W pos	9299011
<b>IPCMini Controller*</b>	
IPCMini, 110/220 V Fischer HV, neg	X3602-64000
IPCMini, 110/220 V Fischer HV, pos	X3602-64001

\* Ion pump controllers 4UHV and IPCMini are available in multiple configurations.

For a complete list of part numbers, please check [www.agilent.com](http://www.agilent.com) or ask your Agilent representative.

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## Ordering Information

### D 1000 and D 2000 Cartridges

Getter Pump	
D 1000 NEG Cartridge, with Heater	X3605-68012
CF100 base flange with connector (for D 1000)	X3605-68022
Cable (controller to cartridge) for NEG Cartridge D 1000, 3m	X3605-68051
D 2000 NEG Cartridge	X3605-68013
CF100 base flange with connector and heater (for D 2000)	X3605-68023
Cable (controller to cartridge) for NEG Cartridge D 2000, 3m	X3605-68052
Controller* for NEG Cartridge D-1000 and D-2000	X3605-68031

(\*) Power cord with Type F (Schuko) plug included