

Vacuum Solutions for Analytical Instrumentation

Make your lab 100% Agilent





Experience a Total Agilent Solution: make your lab 100% Agilent

Agilent is the only global provider of Workflow Solutions for your laboratory including Instruments, Vacuum Products, Consumables and Service Programs.

Did you know that Agilent acquired Varian Vacuum in 2010?

Thanks to this important acquisition, Agilent is a world leader in the design, manufacturing, and application of high-performance vacuum products for research, academia, and industrial applications.

One stop supplier: buy vacuum from your instrument manufacturer!



Agilent Vacuum for your Lab

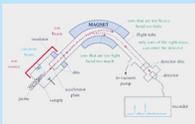
Agilent has a rich history of developing application-specific vacuum solutions for analytical instruments. Our ion pumps, turbomolecular pumps, diffusion pumps, gauges, and mechanical pumps are used by countless manufacturers of mass spectrometers all over the world.

We've earned our position as a market leader by providing high quality, cost-effective solutions for GC-MS, LC-MS, ICP-MS, and Q-TOF applications.

We offer a line of products dedicated to mass spectrometry and to electron microscopy applications: this brochure contains information about these specific products.

Agilent Vacuum for your Lab

Agilent is the only global provider of Workflow Solutions for your laboratory including Instruments, Vacuum Products, Consumables and Service Programs.

Applications	Turbo Pumps	Diffusion Pumps	Gauges
 <p>GC-MS</p>	 <p>TwisTorr 84FS TwisTorr 304FS</p>	 <p>AX-65</p>	 <p>Active Gauges ConvecTorr MBA2-200 IMG-100</p>
 <p>LC-MS</p>	 <p>Dual Flow TwisTorr 84FS TwisTorr 304FS TwisTorr 704FS</p>		 <p>Active Gauges ConvecTorr MBA2-200 IMG-100</p>
 <p>ICP-MS</p>	 <p>Split Flow TwisTorr 84FS TwisTorr 304FS</p>		 <p>Active Gauges ConvecTorr MBA2-200 IMG-100</p>
 <p>ION TRAPS</p>	 <p>TwisTorr 84FS TwisTorr 304FS</p>		 <p>Active Gauges ConvecTorr MBA2-200 IMG-100</p>
 <p>Q-TOF</p>	 <p>TwisTorr 84FS TwisTorr 304FS</p>		 <p>Active Gauges ConvecTorr MBA2-200 IMG-100</p>
 <p>MAGNETIC SECTOR</p>	 <p>TwisTorr 304FS TwisTorr 704FS</p>		 <p>Active Gauges ConvecTorr MBA2-200 IMG-100</p>
 <p>ELECTRON MICROSCOPES</p>	 <p>TwisTorr 84SEM and 304SEM TwisTorr 704FS and 701 SEM Integrated Double Damper</p>		 <p>Active Gauges ConvecTorr MBA2-200 IMG-100</p>
 <p>BIOREACTORS/ FREEZE DRYERS</p>			 <p>Active Gauges ConvecTorr MBA2-200 IMG-100</p>

Ion Pumps	Valves	Rotary Vane Pumps	Oil-Free Scroll Pumps	Leak Detectors
	 <p>Direct Acting Electromagnetic Block Valve</p>	 <p>DS40M DS 102</p>	 <p>IDP-3 IDP-10</p>	
	 <p>Direct Acting Electromagnetic Block Valve</p>	 <p>MS40+ MS120 DS 302 DS 402 DS 602</p>	 <p>PTS800 IDP-10</p>	
	 <p>Direct Acting Electromagnetic Block Valve</p>	 <p>MS40+ MS120 DS 302 DS 402 DS 602</p>		
	 <p>Direct Acting Electromagnetic Block Valve</p>	 <p>DS 102 DS302</p>	 <p>IDP-3 IDP-7 IDP-10</p>	
	 <p>Direct Acting Electromagnetic Block Valve</p>	 <p>DS 102</p>	 <p>IDP-3 IDP-7 IDP-10</p>	<p>HLD Helium Leak Detector</p>
 <p>Vaclon Plus 40 Vaclon Plus 55 Vaclon Plus 75</p>	 <p>Direct Acting Electromagnetic Block Valve</p>	 <p>DS 102 DS 202 DS 302</p>	 <p>IDP-3 IDP-7 IDP-10</p>	
 <p>Vaclon Plus 25 SEM Vaclon Plus 35 SEM Vaclon Plus 45 SEM Vaclon Plus 55 SEM Vaclon Plus 75 SEM</p>	 <p>Direct Acting Electromagnetic Block Valve</p>	 <p>DS 102 DS 202 DS 302</p>	 <p>IDP-3 IDP-7 IDP-10</p>	<p>PHD-4 Portable Sniffer</p>
	 <p>Direct Acting Electromagnetic Block Valve</p>	 <p>DS 102 DS 202 DS 302</p>	 <p>IDP-3 IDP-7 IDP-10</p>	

Quiet, Green, Oil-Free Scroll Pumps

Go green, go silent
with Agilent Dry Scroll Technology



IDP Oil-Free Scroll Pumps:



IDP-7 and IDP-10 dry Scroll Pumps

Agilent Oil-Free Pumps for a quieter laboratory environment: no oil contamination and lower cost of ownership compared to standard oil-sealed rotary vane pump

- Agilent Dry Scroll pump technology
- Silent: no need for quiet cover
- Eliminate the danger of oil spills or leakage for a clean, safe work environment
- Eliminate environmental issues related to oil disposal and oil vapor management
- Longer maintenance intervals eliminate quarterly PM
- Clean, green, affordable vacuum pump solution
- Integrated Isolation Valve to protect your vacuum system in case of power failures



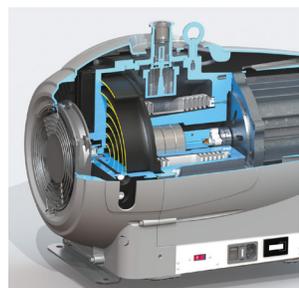
Hermetic pump with motor and bearings completely isolated and protected from process gases to extend operating life

IDP-3 oil-free scroll pump

The Best Choice for Agilent 5973, 5975, 5977 series

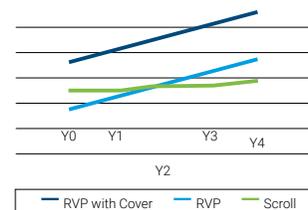


- Agilent recommended pumping solution
- Proven superior reliability
- Easy maintenance
- Agilent multi-level product support



Designed specifically for low noise (<50 dBA) and vibration (Built-in vibration isolation)

Oil-Free Pump Cost of Ownership Advantage



● CoO Cost of Ownership

Ordering information	
Dry Upgrade for GC-MS	G6696A
Dry Upgrade for GC-QQQ	G6697A

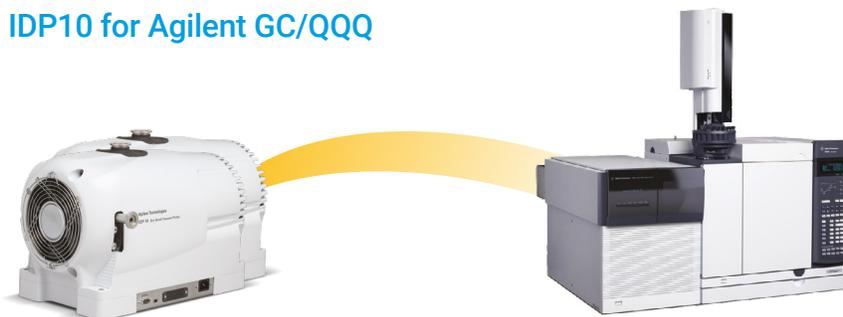
- Green, eco-friendly: dry solution, oil-free

- Quiet: no need for quiet cover



How Quiet is the IDP-3?	
Noise	dBA
Chainsaw; thunder clap	120
Car horn (1 m); live rock music	110
Lawn mower; airplane take off (1 km)	100
Motorcycle (8 m away)	90
Freight train (25 m); food blender	80
Cars on freeway; vacuum cleaner	70
Air conditioner (30 m); office noise	60
Rotary Vane Pump	55
IDP oil-free vacuum pump ; or conversation at home	50
Library	40

IDP10 for Agilent GC/QQQ



The Best choice for Agilent 7000 and 7010 series

- Agilent recommended pumping solution
- Proven superior reliability
- Easy maintenance
- Agilent multi-level product support
- GO Green with Agilent IDP Scroll Pumps

Compact Rotary Vane Pumps

Vacuum Solutions for Mass Spectrometry



Rotary Vane Pumps Features

- Agilent DS-Series, MS40+ and MS120+
- Most compact footprint and light weight
- Variable speed control to optimize pump performance (speed, pressure, noise)
- Constant performance worldwide
- Remote and serial communication capability
- Quiet cover included on MS120

Rotary Vane Pumps from 2 to 120 m³/h, with and without Inverter.

Agilent rotary vane pump technology

Thanks to a very simple and highly reliable design, Agilent field-proven rotary vane pumps provide excellent vacuum performance.

High quality and manufacturing standards ensure that the DS Rotary Vane Pumps provide excellent pumping stability for light gases, low noise, minimal oil backstreaming, and a long operating life..

Agilent DS40M

Designed for Labs and Analytical Instruments



- No oil leaks
- The lowest noise
- Low cost of ownership
- Small footprint, light weight
- Low power consumption CE and cTUVus marked
- Tested successfully on a variety of GC-MS instruments, Leak Detectors and Turbo Pumping Systems

Agilent DS40M, The New 2 m³/h Rotary Vane Pump with Magnetic Seal: No Oil Leaks.

Integrated Anti-suck back Valve: **oil-free back-flow**

Designed for low noise: **The quietest 2 m³/h in the market - only 45 dB(A)* !!**

Designed for Low Power Consumption: **Low Cost of Ownership**

Magnetic Coupling: **No oil leaks**

Designed for instrument integration: **Cooler**

*@ 50 Hz, 46 dB(A) @ 60 Hz



MS40+

Single stage Rotary Vane Pumps with Inverter

- High capacity pumping speed with the smallest footprint
- Proven inverter technology
- Ideal for mass spectrometry and electron microscopy
- Lowest noise, highest throughput
- Suitable for steady and high gas throughput conditions at pressures below 10 Torr, in applications including Mass Spectrometry (including LC-MS, ICP-MS, GC-TOF-MS, etc.), Electron Microscopy, and other scientific instruments.



Agilent MS120

Total solution for high end LC-MS

- A reliable line of pumps that perform in the most demanding industrial and scientific applications
- Agilent MS120 is the ultimate pumping solution for High End LCMS, featuring 120 m³/h capacity, integrated quiet cover and wheels

Reliable turbomolecular pumps

TwisTorr FS, the new generation turbo pumps with floating suspension: solid, reliable, powerful, quiet.



Agilent TwisTorr FS: the new standard in high vacuum performance

TwisTorr 84, 304 and 704 FS: Agilent Guaranteed Quality

Compact, energy efficient, best-in-class turbo-drag packages, with innovative breakthrough technologies leading to outstanding performance and reliability, to lower noise and reduced power consumption.



TwisTorr FS pumps



Pump rotor with Floating Suspension

Agilent Floating Suspension

- Low vibration and acoustical noise
- Extended bearing operating life
- Exceptional stability for demanding application SEM, MassSpec

Unique patented TwisTorr drag technology

- Best in Class throughput
- High pumping speed and compression ratio
- High foreline tolerance
- Low power consumption, low operating temperature



TwisTorr stators

Agilent Twistorr 304 FS

All 5973 customers can benefit from the Agilent Turbo GC-Retrofit kit, a reliable Turbo pump solution for your instrument.

Experience the Turbo Upgrade Kit Advantage. With the 5973 GC Retrofit Package you can have:

- A complete solution to replace your current Turbo
- A very reliable product
- Flexible Service offer ranging from Product Factory Repair up to Turbo complete Exchange
- Agilent personnel for pump installation and system check



Agilent TwisTorr 304 FS

TwisTorr 304 FS For 5973	X1500-64004
--------------------------	-------------

TwisTorr 304 FS SPLIT FLOW

The Best High Vacuum Solution for LC-MS

- Dual and tri-flow pumps in both cartridge and envelope versions
- Designed for flexibility and customization for high throughput applications



TwisTorr 304 FS Split Flow

Agilent SEM turbo pumps

The Best High Vacuum Solution for Electron Microscopes

- No Oil
- Low vibration
- No stray magnetic field
- Proprietary vibration isolation systems
- Lowest cost of ownership



TwisTorr SEM solution with vibration damper

SEM Application-specific Ion Pumps

Vacuum Solutions for Electron Microscopy



A complete line of Ion Getter Pumps for Electron Microscopy

Agilent Ion Pumps

- Agilent, inventor of the Ion Pump, has the largest installed base worldwide and is the leading supplier to research and industry
- Highest noble gas pumping speed and capacity
- Longest life pumps at over 80,000 hours



Agilent Ion Pumps and Controllers

Agilent SEM Ion Pumps

- Industry leading ion pump technology for imaging applications with low electrical noise configurations for pump/controller
- A complete range of SEM dedicated ion pumps from 10 to 75 l/s, with small footprint for easy system integration
- Ideal for high vacuum guns where stable vacuum and low leakage current is required



SEM Ion pump and pumping element

Diffusion pumps



SEM Ion pump and pumping element

Agilent is the worldwide leader in Diffusion Pumps

Agilent diffusion pumps have high throughput and high foreline tolerance.

- Agilent's AX-65 air-cooled diffusion pumps is your best choice for analytical or laboratory applications that require a dependable, low cost, high vacuum pump, and can be easily configured to best suit your application requirements.
- Available in KF50/ISO-63 and 2 in. ASA/ISO-100 sizes, the AX Pumps are high performance, air-cooled pumps designed with analytical instruments in mind.

Vacuum measurement, hardware and control



Agilent Active Gauges series

Complete offering of gauges, controllers and hardware make it easy to build your system

- The Broadest Gauging
- Line in the Industry: from rough vacuum to combination gauges that span the entire vacuum range with an array of options including onboard display, setpoint control and field bus networking capability



Agilent UHV Gauges

Electromagnetic Block Valves:

- Rapid spring closure,
- Service-free,
- Without need of compressed air.



Agilent Vacuum Valves

Clean, Dry, Quiet Leak Detectors

Best-in-class performance, quietest operation



HLD Leak Detector (mobile version)

New Helium Leak Detector

Research and university labs often require a portable leak detector with the versatility to cover a wide range of applications. The ability to be moved easily from lab to lab, in conjunction with high performance specifications in both the evacuation and pressurized mode, make the HLD Series an essential tool for this environment.

- Electron microscopes
- Experimental chambers
- Surface analytical systems
- Space chambers

HLD MD15 and BD15 with the Agilent IDP-15 Dry Scroll Pump, the quietest in its class.



HLD Leak Detector (bench version)

Agilent patented dual pump design prevents false signals and reduces clean up time

Cuts time spent waiting to reach high sensitivity

Helium clean up performance after exposure to a large leak		
Leak rate reading with:	After 30 s	After 60 s
Single Pump Design	8E-7	6E-7
Dual Pump design	2E-7	6E-10



PHD-4 Portable Sniffer Leak Detector

PHD-4 Portable Sniffer

The PHD-4 is a portable compact leak detector which includes a battery for autonomous use in the field and uses helium as a tracer gas. It allows detection of very small leaks in objects, chambers or vessels where a slight helium pressure has been introduced.

- High sensitivity to Helium: can detect very small leaks
- Easy to Use: no training required
- Truly Portable: compact and light
- Versatile: suitable for many different applications
- Dependable: long term operation

The PHD-4 Portable Helium Detector is required in applications like:

- Bioreactors and fermenters
- Freeze dryers
- Power generating plants,
- Petrochemical plants
- Large condensers or heat exchangers

Agilent Vacuum Products Service and Support

From your preferred vacuum partner



Vacuum Solutions for Better Service

The power of over 60 years of expertise in vacuum technologies, applied to pumps and leak detectors service and support plans.



Exchange

Advance Exchange – In a fast moving world we keep your business ahead. Our Premium Advance Exchange Program maximizes your uptime and enables you to focus on what you do best – your business.

- Quick and hassle-free turnaround
- Refurbished to “As New” specifications
- Full one-year warranty



Quality Repair

When uncompromised quality at the right price is essence, you need a trusted partner to deliver it. Specialized Repair Centers around the globe bring Agilent quality standards closer to you.

When your TwisTorr turbo pump needs attention, we have the right know-how and experience to deal with it.

- Certified process and workmanship
- Genuine Agilent parts



Dedicated Solutions

Your work is important to us. Our technology refresh programs and tailored service plans are designed to protect and secure your investment.

Customized service contracts and a comprehensive upgrade program are designed around your business needs and make us the natural choice as your vacuum service partner.

- Stay up to date
- Close to your business
- Personalized coverage

Agilent Vacuum Products Multivendor Support

One-stop Service Solutions beyond the Brand Service for Your whole Vacuum equipment, made easy

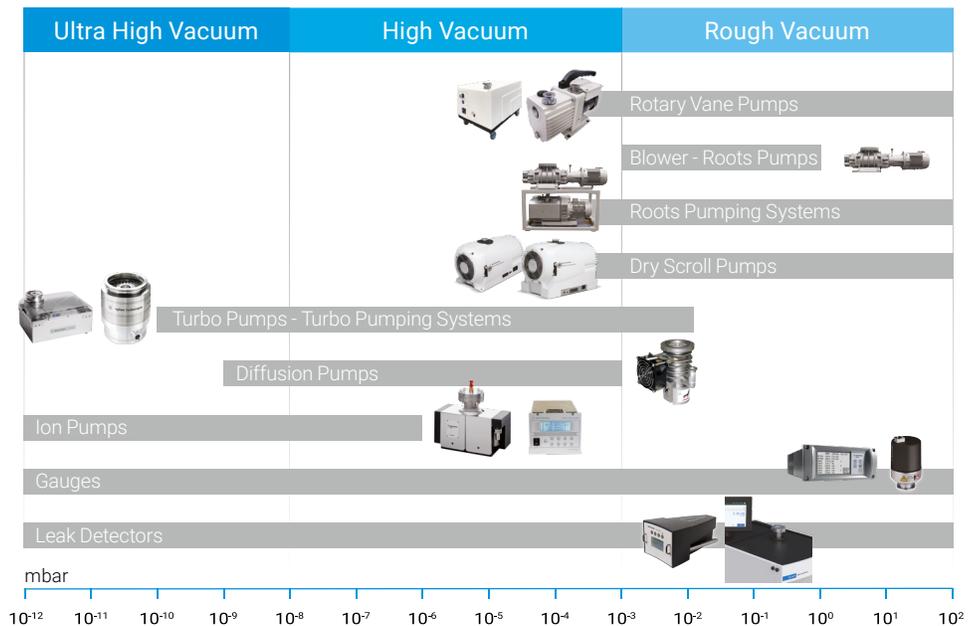
Agilent's new Multivendor Service offers an array of options to meet the needs of your entire vacuum installed base. We provide comprehensive repair and maintenance services for vacuum instruments regardless of manufacturer, to maximize uptime and simplify administration.

- Proven Experience as Vacuum and Leak Detection technology leader.
- Technical Expertise certified through direct hands-on Multi Brand training
- Single Point of Contact for support on all leading vacuum brands.
- Dependable Services - preventive maintenance and repair services to meet your requirements

Service Support Comparison						
		Pfeiffer	Edwards	Leybold	Adixen	Inficon
Turbo Pumps		✓	✓	✓	✓	
Scroll Pumps			✓	✓		
Rotary Vane Pumps		✓	✓	✓	✓	
Leak Detectors				✓	✓	✓

Agilent offers repair and maintenance services also for vacuum products of different manufacturers.

Agilent: a full range of vacuum products



Agilent Vacuum Solutions for Analytical Instrumentation

Ordering Information



Find the right Agilent Vacuum Pump for each Lab Instrument

Material P/N	Material description	Component Family	System Family	System Type	Agilent Model
G6696A	IDP-3 Scroll GCMS Upgrade KIT*	OIL-FREE PUMP	GCMS	Single Q	597X
G6697A	IDP-10 Scroll GC/QQQ Upgrade Kit*	OIL-FREE PUMP	GCMS	Triple Q	70XX
X3848-64800	TriScroll 800 Scroll LCMS 6550 Upgrade 6550	OIL-FREE PUMP	LCMS	Q-TOF	6550
X3815-64010	IDP-15 Scroll Pump Std/with Inlet valve	OIL-FREE PUMP	GCMS	Triple Q	70XX
IDP3TS	IDP-3 Tip Seal Kit	CONSUMABLE	GCMS	Single Q	597X
X3807-67000	IDP-10 Scroll pump tip seal kit	CONSUMABLE	GCMS	Triple Q	70XX
X3815-67000	IDP-15 Scroll pump tip seal kit	CONSUMABLE	GCMS	Q-TOF	72XX
PTSS0800TS	LCMS TRISCROLL 800 PUMP TIP SEAL KIT	CONSUMABLE	LCMS	Q-TOF	6550
* Scroll Pump GCMS Upgrade Kits include pump, isolation valve, clean foreline hose, center rings, clamps, silencer and gas ballast valve					
X1699-64052	DS40M RVP 110V Analytical Bundle**	OIL ROTARY VANE	GCMS	Single Q	
X1699-64053	DS40M RVP 220V Analytical Bundle**	OIL ROTARY VANE	GCMS	Single Q	
9499315M012	DS102 RVP Universal Voltage - Analytical Bundle**	OIL ROTARY VANE	GCMS	Triple Q	7000
9499320M012	DS202 RVP 240V - Analytical Bundle**	OIL ROTARY VANE	GCMS	Q-TOF	7200
9499330M007	DS402 RVP Universal Voltage - Analytical Bundle**	OIL ROTARY VANE	ICPMS	Single Q	7700
9499225M011	MS40 RVP - LCMS Version - Analytical Bundle**	OIL ROTARY VANE	LCMS	Single Q	6100
9499225M011	MS40 RVP - LCMS Version - Analytical Bundle**	OIL ROTARY VANE	LCMS	TOF	6200
9499225M011	MS40 RVP - LCMS Version - Analytical Bundle**	OIL ROTARY VANE	LCMS	Triple Q	6400
9499225M011	MS40 RVP Special MS40+ for heavy duty LCMS/ICPMS	OIL ROTARY VANE	LCMS/ICPMS	Single Q/ Triple Q	All models
X3702-64000	MS120 for High End LC-MS	OIL ROTARY VANE	LCMS	Triple Q	
9499390	DS Line Oil Bottle AVF Silver	CONSUMABLE			
X3760-64005	MS40 Line Oil Bottle AVF Gold	CONSUMABLE			
X3760-64004	MS40 Line Oil Bottle AVF Platinum	CONSUMABLE			
9499342M003	EXHAUST REPLACEMENT CARTRIDGE	CONSUMABLE			
9499375M006	DS 3/8 G OIL DRAIN EXTENSION	CONSUMABLE			
9499392M006	DS EXHAUST FILTER NW25	CONSUMABLE			
9499396M003	DS POWER CABLE	CONSUMABLE			
** Oil pumps bundles include pump, cable and oil bottle					

Material P/N	Material description	Component Family	System Family	System Type	Agilent Model
X3500-64004	TwisTorr 304FS Single Flow for Agilent 5977 and GCQTOF	TURBOPUMP	GCMS	Single Q/Q-TOF	5977/7200
X3500-64010	TwisTorr 304FS Split Flow for GCQTOF	TURBOPUMP	GCMS	Q-TOF	7200
X1500-64004	Agilent 5973 GCMS Turbo Upgrade Kit	TURBOPUMP	GCMS	Single Q	5973
X3500-64000	TwisTorr 304FS Single Flow for Electron Microscopes	TURBOPUMP	TEM/SEM	ALL	
X3500-64010	TwisTorr 304FS Split Flow for Electron Microscopes	TURBOPUMP	TEM/SEM	ALL	
9699396	Special Double Damper for Electron Microscopes Electron Microscope ***	VIBRATION DAMPER	TEM/SEM	ALL	
*** Agilent Patented Best in Class Turbo vibration Damper					
119-0570	25 SEM Ion Pump for Electron Microscope	ION PUMP	SEM		
119-0575	35 SEM Ion Pump for Electron Microscope	ION PUMP	SEM		
119-0577	45 SEM Ion Pump for Electron Microscope	ION PUMP	SEM		
619-0577	45 SEM IB Compact Ion Pump for Electron Microscopes	ION PUMP	SEM		
119-0578	55 SEM Ion Pump for Electron Microscope	ION PUMP	SEM		
119-0580	75 SEM Ion Pump Electron Microscope	ION PUMP	SEM		
CALL IN for Details	HLD	LEAK DETECTOR	BIO REACTORS		
CALL IN for Details	PHD 4 LEAK DETECTORS	LEAK DETECTOR	BIO REACTORS		
CALL IN for Details	PHD 4 LEAK DETECTORS	LEAK DETECTOR	FREEZE DRYERS		
More items available: tell us your system type and our experts will recommend the best agilent vacuum product to fit your needs					

Vacuum solutions for analytical instrumentation

Make your lab 100% Agilent

Learn more:

www.agilent.com/en/products/vacuum-technologies

Buy online:

www.agilent.com/chem/store

U.S. and Canada (toll free):

+1 800 882 7426

agilent_inquiries@agilent.com

Europe: (toll free) :

+00 800 234 234 00

info_agilent@agilent.com

China (toll free) :

400 8206778 (mobile)

800 8206778 (landline)

Asia Pacific:

inquiry_lsca@agilent.com

Other countries:

+39 011 9979 132

This information is subject to change without notice.

© Agilent Technologies, Inc. 2018
Published in the USA, September, 2018
5994-0681EN

