

## Water and Organic Vapor Sorption Analyzer

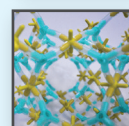
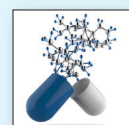
There is a new star in the Quantachrome lineup of precision sorption analyzers! The VSTAR™ vapor sorption analyzer goes beyond water sorption to provide vapor sorption analysis using a wide variety of organic vapors at a wide range of temperatures. Meticulous control of the manifold temperature from the vapor source to the sample eliminates the possibility of local condensation of the adsorptive and ensures the most accurate analysis possible.

The VSTAR measures complete adsorption-desorption isotherms, that is the quantitative uptake of vapor as a function of relative pressure / relative humidity at a user selectable, thermostatically controlled temperature. Such measurements are of critical importance to material scientists developing adsorption based technologies for chemical process and environmental applications.

### Features - Benefits:

- Single thermostatically controlled manifold and vapor source chamber for homogeneous temperature throughout. Cold spots where condensation or wall effects can deteriorate results are eliminated.
- Manifold and vapor source temperature is user selectable from 40°C to 110°C.
- Up to four sample stations for high throughput or a single station for economy. Choose the model that fits your needs.
- Each sample station can be maintained at a different temperature (requires multiple circulator baths) or run at a common temperature (sharing a single circulator bath).
- Standard circulator controls the sample temperature from -20°C to 100°C with a stability of  $\pm 0.01^\circ\text{C}$  and optional circulators can extend that range to -40°C to 100°C and/or the stability to  $\pm 0.005^\circ\text{C}^*$ .
- Small volume of sample jackets reduces thermal gradients, even when sharing a single circulator for four stations.
- Dedicated pressure transducers on each sample station reduce void volume and allow simultaneous equilibration of all stations.
- Optional pressure transducers for increased precision at low pressures are available.
- Optional turbomolecular pump to allow low-pressure measurements.
- Internal vacuum system reduces clutter and saves valuable bench space.
- Integrated cold trap prevents vapors from entering the vacuum pump and reducing its efficiency.
- Isolation valves protect sensitive or hygroscopic samples when transferring them from the outgasser to the analysis station.
- Windows® based software provides a flexible interface for setting up experiments, controlling instrument functions, and displaying data. A full complement of classical and modern models for data reduction and display is included.
- The system is supplied complete and ready for operation. Vacuum pump, circulator, tubing, samples cells, etc. are all included.

\*According to manufacturer's specification of circulating bath without load. Actual sample temperature limits will differ, depending on manifold temperature.



## Specifications

Independent analysis stations, each consisting of: sample cell, isolation valve, pressure transducer, and recirculating dewar. With optional circulating baths, each cell can operate at its own temperature, or with the standard configuration one bath can be shared with all operating cells.

Performance	1 Station	2 Station	3 Station	4 Station
<b>Analysis Stations:</b>	1	2	3	4
<b>Analysis Gas Input:</b>	1	1	1	1
<b>Analysis Liquid Input:</b>	1	1	1	1
<b>Pressure Transducers<sup>1</sup>:</b>	2	3	4	5
<b>Optional Extra Transducers Maximum:</b>	1	2	3	4
<b>Transducer Accuracy<sup>2</sup> :</b>	<0.05% FS	<0.05% FS	<0.05% FS	<0.05% FS
<b>Vacuum Pump:</b>	Internal, optional turbo	Internal, optional turbo	Internal, optional turbo	Internal, optional turbo
<b>Degas type:</b>	External (standard), In Situ (optional)	External (standard), In Situ (optional)	External (standard), In Situ (optional)	External (standard), In Situ (optional)
<b>Loading Samples:</b>	Isolation valve for degassing and transferring to analysis station. Quick connect/disconnect of circulating bath and sample cells.			
<b>Sample Cells:</b>	Glass of various sizes			
<b>Analysis Temperature Range<sup>3*</sup>:</b>	-20°C to 100°C	-20°C to 100°C	-20°C to 100°C	-20°C to 100°C
<b>Thermostated Manifold:</b>	Yes (40°C to 110°C)	Yes (40°C to 110°C)	Yes (40°C to 110°C)	Yes (40°C to 110°C)
<b>P<sub>0</sub>:</b>	Calculated from temperature, measured on empty station, or user entered.			
<b>Data Reduction and Reporting:</b>	Full complement of data reduction and display methods			
<b>Environmental, Electrical, and Mechanical</b>				
<b>Temperature Range:</b>	10°C – 38°C			
<b>Max Relative Humidity:</b>	90% (non-condensing)			
<b>Input Voltage (VAC):</b>	100–120 or 200–240 (switch selectable)			
<b>Frequency (Hz):</b>	50/60			
<b>Max Power (W):</b>	270	340	410	480
<b>Dimensions, Width x Depth x Height:</b>	85.8cm x 52.5cm x 75.0cm (33 <sup>3</sup> / <sub>4</sub> " x 20 <sup>3</sup> / <sub>4</sub> " x 29 <sup>1</sup> / <sub>2</sub> "			
<sup>1</sup> Standard version (optional low pressure transducers can be installed)	<sup>*</sup> According to manufacturer's specification of circulating bath without load.			
<sup>2</sup> For standard 1000 mbar pressure transducer	Actual sample temperature limits will differ, depending on manifold			
<sup>3</sup> Standard Version	temperature.			

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Your local representative:

