



# V-OVG

## Vertical Owlstone Vapor Generator

*Generate low ppb to high ppm concentrations of gases using permeation and diffusion tube technology*



### What is it?

The Owlstone V-OVG is a system for generating precise, repeatable trace concentrations of gases. By using permeation and diffusion tube technology, a range of concentrations from low parts per billion to high parts per million levels can be achieved. The large permeation oven allows the use of up to 6 permeation tubes to create multiple-component mixtures, or a diffusion tube to generate high ppm concentrations.

### KEY FEATURES:

- High number of available compounds
- Generation of multiple gas mixtures
- Fast and easy sample replacement
- High accuracy and precision, even at lowest concentrations
- Can replace multiple expensive gas cylinders

### How Do Permeation and Diffusion Tubes Work?

Permeation tubes allow the generation of vapor from solid and liquid sources, as well as gases. A small amount of the chemical is sealed inside a short length of plastic tubing. The analyte will permeate very slowly through the walls of the tube, at a rate dependent on the temperature of the tube. A flow of air or nitrogen is then used to dilute and carry away the permeating analyte.

Diffusion tubes work in a similar temperature-dependent way, but instead of permeating through plastic, the analyte diffuses straight out of the tube through a hole at the top (which may be covered with a membrane).



Figure 1 - Permeation Tube



Figure 2 - Diffusion Tube



## V-OVG System Components

The V-OVG system utilizes the properties of permeation and diffusion tubes to provide controllable concentrations of calibration gases. The internal permeation oven controls the tube temperature to within 0.1°C over a range of temperatures from 30 to 100°C, ensuring accurate control of permeation rates. The internal mass flow controllers provide a calibrated flow of air or nitrogen through the permeation oven, for precise dilution of the permeating analyte.

## Complete Chemical and Environmental Testing

The V-OVG system can also be combined with other products in the GEN-SYS range, including the OHG-4 humidity generator and OFC-1 flow controller, to form an integrated test platform capable of generating an even wider range of test conditions.



### TECHNICAL SPECIFICATION:

Technology	Permeation and diffusion tubes
Available Analytes	>500 including VOCs, environmental gases, explosive and CW agents and simulants
Computer Communications	RS-485 Optional
Dimensions	H 262mm, W142mm, D260mm
Sample Outlet Connection	1/8" Swagelok Tube
Sample Outlet Flow Rate	20-250 ml/min
Exhaust Connection	1/4" Swagelok Tube
Exhaust Flow Range	0-3000 ml/min
Exhaust Pressure	<30 psi
Inlet gas	Regulated nitrogen/air, free from impurities, -35°C dew point
Inlet Connection	1/4" Swagelok quick connect
Inlet Pressure	40 psi
Output Concentrations	Low ppb/ppt – high ppm
Oven Diameter	40mm
Oven Temperature	30-100 °C ±0.1°C, in 0.1°C increments
Power Supply – Inlet	100-240V AC

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