



FlowSafe Stable Vortex® II Fume Hood



A Different Kind of Fume Hood

The patented FlowSafe Stable Vortex® II Fume Hood is different from conventional fume hoods. The aerodynamic design constantly senses and responds to environmental airflow disturbances and physically adjusts its back baffle to ensure stable airflow movement within the hood and prevent the back flow of dangerous chemicals into the user's breathing zone.

Conventional fume hoods simply measure airflow coming through the sash (usually 100 FPM), and cannot adjust for real-world environmental airflow changes like sash movement, hood loading, user movement, people walking by the hood, doors opening and closing, etc.

Benefits for Multiple Stakeholders

Users like the Stable Vortex® II because of its high level of dependable safety, and the lower required FPM makes working with fine powders and performing other delicate tasks much easier. The vertical sliding sash also protects users of all heights.

Educators prefer it because it is quieter than average fume hoods, and labs can be dual-purposed as lecture spaces. Various colors and hood sizes are also available so they can customize their lab.

ESCOs and administrators like it because of the energy cost savings.

Facility managers like that you can retrofit older hoods with the Stable Vortex® Conversion Kit based around your schedule without decommissioning an entire lab.

HVAC technicians like it because it's simple to commission, low maintenance, reduces the load on the overall HVAC system, and it passes the ASHRAE 110-2016 test as manufactured, as installed, and as used.



Constant Containment with Lower FPM

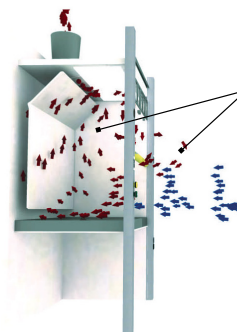
Why a Stable Vortex?

Similar to a fireplace, all fume hoods have a vortex that is created in the upper chamber of the hood, and just like a fireplace, environmental disruptions can cause this vortex to collapse, and the air to “spill” back out into the room. For a fireplace, this just means you have a soot-filled room, but for a fume hood user it could mean inhaling dangerous chemicals and dusts.

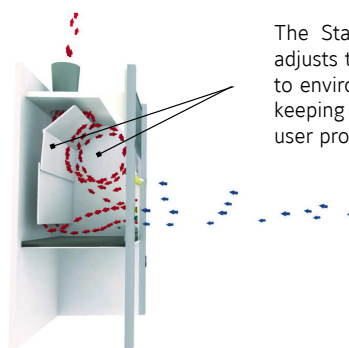
When this vortex is stable, it keeps air flowing properly into the fume hood, and prevents the dangerous chemicals from rolling out.

The Stable Vortex® II is equipped with a vortex sensor that is constantly sensing air movement and adjusting the baffle in response to environmental fluctuations and user movement. This means that the vortex is constantly adjusting and re-adjusting so that it remains stable, does not collapse, and keeps the user safe.

Other fume hoods on the market do not have an automatically-adjusting baffle to respond to environmental changes like doors opening and closing, the sash opening and closing, hood loading, people walking by, etc. When these events disturb the vortex, it can easily collapse and spill.



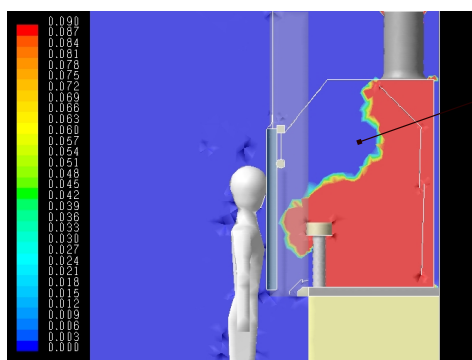
With conventional fume hoods, the vortex can collapse due to environmental air disturbances (no dynamic baffle to move and keep the vortex stable), and dangerous chemicals can float back into the user's breathing zone.



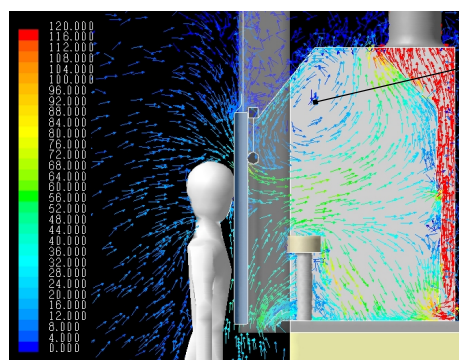
The Stable Vortex® II constantly adjusts the back baffle to respond to environmental air disturbances, keeping the vortex stable and the user protected.

Computational Fluid Dynamics (CFD)

The CFD visuals below illustrate how the airflow is directed within the hood. This CFD model shows a 51 FPM face velocity with a fully open sash with 0 parts per million leakage.



Stable Vortex



Stable Vortex

How Does it Save Energy?

The Stable Vortex® II Fume Hood was designed to create a safer working environment for researchers, chemists, and students. However, a byproduct of the elegant design is that it requires significantly less airflow to properly contain compared to conventional fume hoods and other “low flow” fume hoods. Stable Vortex® II hoods also reduce the load on the overall HVAC system of a facility, which positively affects the comprehensive HVAC cost bottom line.