



Cost Savings Comparison

Hamilton Scientific Fume Hoods

The Fume Hood Cost Savings Comparison Chart depicts 6' bench hoods operating with various sash openings and face velocities. As the face velocity or sash opening is reduced, significant energy cost savings are achieved.

The chart is designed to assist in selecting the most effective hood design for project requirements. Option 5 of the chart is formatted as a trial for any possible dimensions (enter numbers in rows C, D, E and G only, the formula automatically calculates).

The Hamilton Scientific 6' bench hoods included in the chart are the following:

- Mistral
- Concept
- Pioneer

Each hood has an established face velocity – the lower the face velocity recommendation, the lower the energy cost.

To arrive at the cfm or exhaust volume of a particular hood, two factors must be known: 1) the square footage of a particular sash opening and 2) the face velocity. With these two variables known, multiplying them will provide the total cfm or exhaust volume.

Example

In Option 4, the Pioneer hood is operating at 50 fpm (Row E) while in the Baseline the SafeAire II is running at a face velocity of 100 fpm (Row E).

Multiplying the Pioneer's face velocity (50) times the sash opening in square feet (12) provides the total exhaust volume of 600 cfm. This face velocity is directly tied to the exhaust volume (room air removed by the hood) within the lab.

This room air, which is consumed by the hood, is heated in the winter and cooled in the summer.

Reducing the overall exhaust volume of the hood will, in turn, cut energy costs and save money while placing less of a burden on the environment.

Option 4 (Pioneer) vs. the Baseline (Mistral) demonstrates the highest cost savings.

Note: As the opportunity for savings rises, the cost of a hood generally increases. This additional cost is typically offset by the operating savings, especially as the number of hoods operating increases.