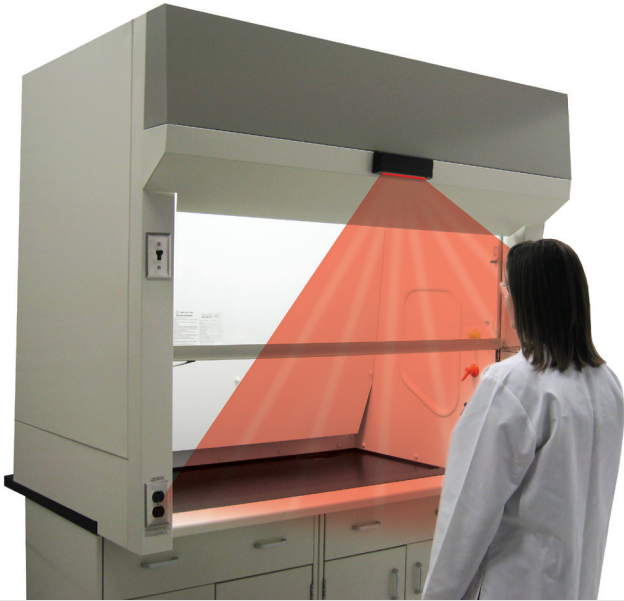


# AUTOMATIC SASH OPERATOR 2 PLUS



## Enhances Safety, Conserves Energy & Saves Money

Closed sashes provide a safety barrier between workers and fume hood contents. Additionally, with Variable Air Volume (VAV) exhaust systems, a closed sash minimizes energy consumption.

The Automatic Sash Operator 2 Plus (ASO2 Plus) does not rely on users to close the sash when they leave the front of the hood. When the user has left the hood face, a sensor notifies the sash to fully close and after a convenient pause.

**Overhead Presence Sensor** – When a user leaves the hood unattended, the sash automatically closes after a pre-set amount of time determined by the user (30 seconds to 30 minutes). When the sash is closed, other workers are protected from the contents of the fume hood.

**Push-to-Open Button** – The sash automatically opens to the established working height, providing safety to the operator. A second press of the push-to-open button will cancel upward travel.

**Auto Light Turn On/Off** – Interior lighting can be turned on or off manually or set to turn off automatically when the sash is closed.

**Obstruction Detection** – When the system encounters an obstruction, the sash stops, an audible alarm sounds, and a visual fault indicator appears on the screen. An additional level of obstruction detection is available with Mott's optional light curtain, which detects obstructions as the sash begins to power closed and prevents downward travel.

**Electronic Sash Stop** – This feature prevents the sash from being raised above the upper limit, predetermined by the administrator, unless the user elects to override the system for experiment setup. The screen will show a yellow alert when the sash is raised above the pre-set sash working height.

**Operator Use** – Unless the motor closer is operating, the sash easily moves up and down with one hand operation. When the motor is moving the sash, the overrunning clutch allows for quick manual operation of the sash. Enabling the tap-and-go feature will power open the sash when it's manually raised 1 inch.

**Product Compatibility** – The ASO2 Plus is designed to be factory mounted on any Mott chain drive, single vertical sash bench fume hood up to 8 feet wide.



# Maximizes Energy Savings and Provides Increased Laboratory Safety



The ASO2 Plus is a great solution designed to unlock the energy savings potential of a VAV fume hood while ensuring the safety of laboratory users.

**Touch Screen Control System** – The screen is intuitive and very easy to navigate. Basic features can be modified by the user while advanced settings are protected with a code. These include:

- Push button open and closing
- Interior lighting can be turned on/off or set to turn off automatically when the sash is closed
- A one hour hold open feature will prevent the motorized sash from closing when setting up or tearing down equipment
- A digital dial for the sash close delay setting
- A sash closing chime
- Red alert notification when an obstruction to sash closure is detected
- Electronic sash stop prevents the sash from being raised above the upper limit
- The admin menu provides access to multiple settings and adjustments, including sash closing force, various optional features and is used for initial system setup, as well as a diagnostic screen

## Potential Airflow Savings

### MINIMUM POTENTIAL AIRFLOW SAVINGS

| Hood Width | Volume @ 100 FPM With Sash Fully Open | Minimum Exhaust Volume With Sash Closed* | Annual Cost With Manual Sash | Annual Cost With ASO2 | Total Average Annual Dollar Savings† |
|------------|---------------------------------------|--|------------------------------|-----------------------|--------------------------------------|
| 48"        | 508 CFM                               | 65 CFM                                   | \$1,340                      | \$544                 | \$796                                |
| 60"        | 667 CFM                               | 85 CFM                                   | \$1,757                      | \$711                 | \$1,046                              |
| 72"        | 825 CFM                               | 105 CFM                                  | \$2,137                      | \$879                 | \$1,294                              |
| 96"        | 1142 CFM                              | 145 CFM                                  | \$3,007                      | \$1,214               | \$1,793                              |

† Calculations are based on 250 workdays per year with sash left open 1- hours per day, with only 1 hour of actual usage per day

Based on an estimated energy cost of \$7.00 per cubic feet per minute per year

\* ANSI Z9.5

### MAXIMUM POTENTIAL AIRFLOW SAVINGS

| Hood Width | Volume @ 100 FPM With Sash Fully Open | Minimum Exhaust Volume With Sash Closed* | Annual Cost With Manual Sash | Annual Cost With ASO2 | Total Average Annual Dollar Savings† |
|------------|---------------------------------------|--|------------------------------|-----------------------|--------------------------------------|
| 48"        | 508 CFM                               | 65 CFM                                   | \$3,556                      | \$544                 | \$3,012                              |
| 60"        | 667 CFM                               | 85 CFM                                   | \$4,669                      | \$711                 | \$3,958                              |
| 72"        | 825 CFM                               | 105 CFM                                  | \$5,775                      | \$879                 | \$4,896                              |
| 96"        | 1142 CFM                              | 145 CFM                                  | \$7,994                      | \$1,214               | \$6,780                              |

† Calculations are based on sash open 24 hours a day, 365 days per year. Actual usage 250 days, with only 1 hour of actual usage per day

Based on energy cost of \$7.00 per cubic feet per minute per year

\* ANSI Z9.5

### Codes & Standards

#### NFPA 45\* Standard on Fire Protection for Laboratories Using Chemicals

##### 7.8.3 Chemical Fume Hood Sash Closures

7.8.3.1 Chemical fume hood sashes shall be kept closed whenever possible.

7.8.3.2 Where a fume hood is unattended, its sash shall remain fully closed.

While the codes do not require automatic sash operators, it's use aids in complying with NFPA 45

#### 2019 California Building Energy Efficiency Standards Section 140.9 (c) 4 - Prescriptive Requirements for Laboratory and Factory Exhaust Systems

\* Copyright NFPA 45

\*\* Copyright ANSI

#### ANSI/ASSE Z9.5\*\*

##### 3.1.1.5 Automatic Sash Closers

"All users shall be trained in good work practices, including the need to close the sash when not in use. All users of VAV systems shall be trained in the proper uses of the sash, the energy consequences of improper use, and the need to close the sash when the operation does not require its use. Automatic sash positioning systems shall have obstruction sensing capable of stopping travel during the sash closing operations without breaking glassware, etc."