

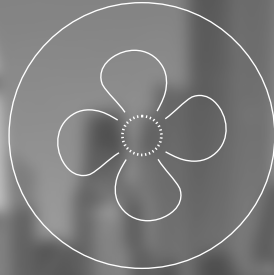


SMART STACK™

ACTIVE SENSING
SYSTEM FOR
LAB EXHAUST FANS



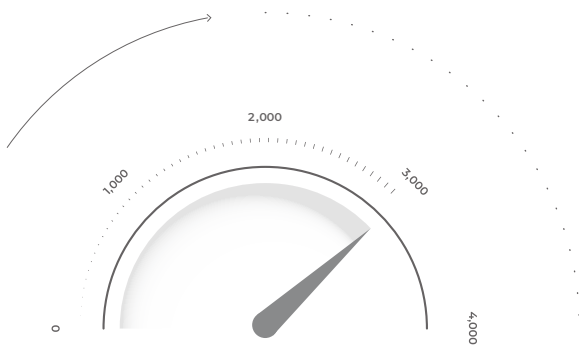
Measured Air
PERFORMANCE



TRADITIONAL LABS

In most labs, a few active fume hoods in the system emit limited levels of contaminants. These contaminants are significantly diluted by the relatively clean air that enters from elsewhere. Although the laboratories operate in these relatively clean states for extended periods of time, the exhaust fan systems in the facility run at high exit velocities (e.g., 3,000 ft/min or higher) at all times.

As a result, these systems frequently operate at much higher total flow rates than are required, using significantly more energy than necessary.



3,000 ft/min is a requirement typically recognized as a standard, however, this setting is only a recommendation from ANSI Z9.5. The standard states that lower velocities can be used, provided there is sufficient dilution.

3,000 ft/min



SMART STACK™ LABS

SmartStack™ is an active sensing system that constantly monitors the cleanliness of lab exhaust air and indexes the exit velocity of high plume fans according to the real-time level of contaminants in the lab exhaust air. This revolutionary approach ensures that dilution criteria are met and that concentrations of hazardous materials remain at safe levels, while maximizing energy savings.

Significantly reduces sensor fouling and drift that normally occur with exposure to high levels of contaminants, such as TVOC's.



Fail-safe system with any anomaly (including loss of power), indexing the fan to the maximum exit velocity setpoint.

Cloud connected with automatic alerts monitored by Measured Air Performance, as well as the client.

Easily integrates with Building Automation Systems and high plume fan controls.



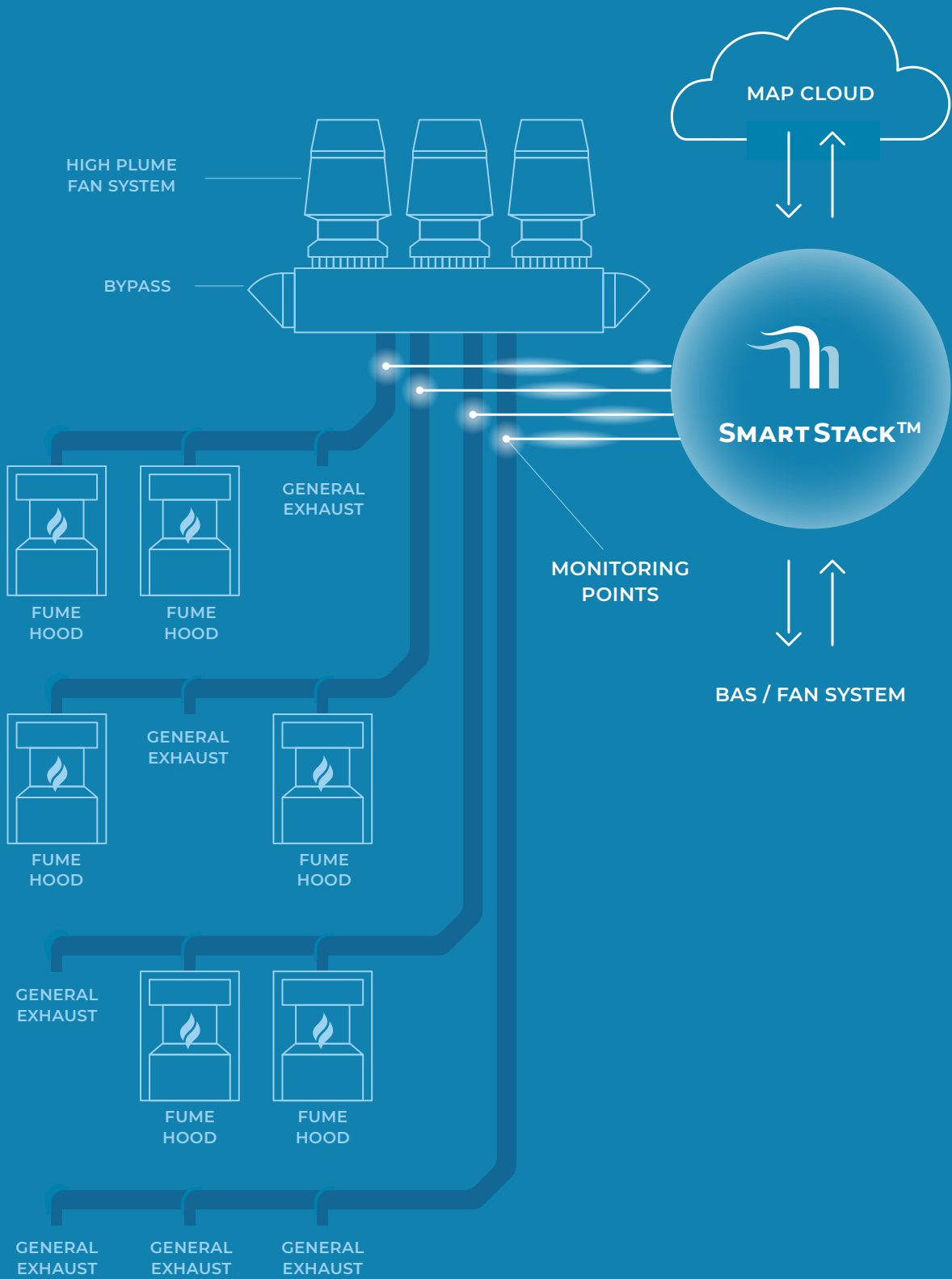
How SmartStack™ Works:

- Continuously monitors each exhaust riser.
- Calibrated Photoionization Detector senses contaminants levels.
- Fan setback to lower velocity only occurs when exhaust air is below action threshold level.
- When action threshold level exceeded, setback is disabled, sensor protection system is activated, and the fan is indexed to maximum exit velocity.
- All sample areas must test clear before enabling fan setback to lower velocity.
- During setback, fan horsepower is saved by closing bypass air dampers at the fan inlet to reduce flow through the exhaust fan, slowing fan motor speed via a VFD.

SmartStack™ Features:

- Patent pending sensing approach that protects the sensor(s) from fouling when contaminants present.
- High reliability, leveraging existing technologies in novel method.
- Timed Setback feature to prevent fan hunting.
- Fail safe design: features based on system diagnostics, index fan to max velocity if a problem is detected (including loss of power).
- Sensor calibration/maintenance and remote monitoring.
- Ease of integration to fan control system or BAS (0-10V/contact closure).
- Galvanic isolation for protection.
- 24VAC power.
- Patent Pending setback override approach (e.g., use with occupancy sensor)

SmartStack™ layout



SmartStack™ qualifies for many utility rebate programs. In some cases, this rebate will create a project with a return on investment in 12 months or less.

Measured Air Performance leverages subject matter expertise in sensing technology, control systems and critical space ventilation to deliver innovative, energy saving products for harsh ventilation applications.



Measured Air
PERFORMANCE

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