

Research Laboratories and Vivariums

Safely Reduce Ventilation Rates

Use indoor environmental quality parameters to generate significant energy savings and first costs.

TODAY'S LABORATORY AND ANIMAL RESEARCH DESIGN TRENDS, reflecting lower fume hood densities, decreasing thermal loads, and the use of ventilated cage racks, suggest a reexamination of traditional ventilation control approaches. The requirement for safe operation and the



use of “dilution” ventilation remains intact, however the emergence of new sensing technologies, now makes it possible to operate laboratories and vivariums with greater energy efficiency.

Existing methods to reduce energy costs include the use of variable air volume (VAV) fume hoods and VAV controls that respond to changing room thermal loads. However, overall ventilation air change rates have remained high due to the perceived requirement that to ensure the breathable environment is safe or “clean”, air change rates need to be set at 6-12 ACH for research labs and up to 20 ACH for vivariums.



However, if the laboratory or vivarium air is continuously sampled and analyzed for the presence of key parameters (i.e. chemicals or particulates) and determined to be free of harmful contaminants, i.e. “clean”, these qualitative measurements could become the basis for dynamically varying room ventilation rates, and thus save significant energy costs, while maintaining a safe environment.

*OptiNet introduces a new sensing and control approach called **Laboratory/Vivarium Demand Controlled Ventilation** to produce dramatic savings in mechanical system first costs and energy costs by matching the ventilation rates to the environment. OptiNet levels the playing field by dynamically reducing air change rates when the air is clean—saving vast amounts of energy, but dynamically raising the rates during those occasional times when a spill or release occurs. You get safety and savings!*

BENEFITS OF LABORATORY/VIVARIUM DCV

- Dramatic energy savings
- Validates safe operation of a lab/vivarium
- Documents good IEQ
- Allows for safer lab and vivarium airflow control



OptiNet™

Energy Savings, Safety, and Comfort for Today's Smart Buildings

