



## laboratory solutions

Celeris® is a platform of high-performance Variable Air Volume (VAV) airflow control valves for fume-hood intensive, high-level containment and pharmaceutical manufacturing facilities. Celeris protects researchers and safeguards the integrity of the research environment in critical control environments, while offering optimum energy efficiency.



## Phoenix Controls: The Leader in Precision Airflow

Your business demands precision airflow control for critical spaces. It is a matter of safety, pure and simple. Safety for world-class research laboratories. Safety for collaboration in the world of emerging sciences. Safety for patients and staff in state-of-the-art hospitals. For all critical airflow control needs, Phoenix Controls is simply the best in the business.

For more than 20 years, the name Phoenix Controls has meant peace of mind for thousands of corporations around the globe. Our customers know the quality and reliability of the Phoenix Controls venturi valve and control system are second to none. Yes, we know safety is the primary reason our customers choose us. But today, there are even more reasons to design our valves into projects. Our innovative airflow

control solutions provide new ways to save energy and reduce the costs of maintaining HVAC systems.

Increasingly higher energy costs are driving the need for more efficient airflow control solutions. Celeris state-of-the-art control solutions leverage the precision flow control of the Phoenix Controls venturi valve. Celeris offers optimum turndown while ensuring safety for researchers and maintaining the environmental integrity of the research spaces. As building airflow control systems become more complex, costs for their maintenance rise. Celeris delivers the value of an energy-efficient environmental control system that requires virtually no maintenance for the entire life of the building.

## Celeris Airflow Control Designed for Critical Environments

The Celeris family of products is designed to provide exceptional airflow and comfort control for demanding high-reliability wet chemistry, vivarium, biocontainment and pharmaceutical cleanroom facilities. The same principles of fast, accurate, pressure-independent airflow control that established Phoenix Controls' reputation as the unmatched standard in fume hood control systems have been applied to room or suite-level control.

From primary containment devices, such as fume hoods, ventilated cage racks and biosafety cabinets, to the secondary containment barrier (i.e., lab spaces), the precision airflow control of a Celeris-controlled venturi valve ensures the desired ventilation rate and space pressurization are maintained at all times. The safety and well-being of the researchers and research subjects inside the lab, as well as those who work in adjacent spaces, are also ensured.

Research facilities require precise and stable temperature and humidity control. The Celeris built-in temperature and humidity control functions are highly configurable, predefined applications that deliver superior performance. From simple reheat control to cascading thermal anticipatory control, the Celeris Configuration

Plug-in makes setup simple and no programming is required.

With higher air change rates and the heat loads generated by the equipment housed in these spaces, energy consumption is an issue. The Celeris system offers many opportunities for energy savings, from simple changes to the minimum ventilation and temperature set points during occupied and unoccupied time periods, to using Celeris Shut-off Valves to decommission fume hoods or entire lab spaces when unused for extended periods. By sensing indoor air quality, advanced features, such as demand-based ventilation and return air control, can further reduce air change rates to levels considered impractical in the past. The Celeris control algorithms and the Phoenix Controls valve provide unparalleled performance over large flow turndowns (up to 20:1).

The Celeris critical environmental control system seamlessly integrates with BACnet® capable building management systems and provides a powerful, feature-rich platform scalable for a variety of spaces—from a single room in a suite of cascaded pressure controlled spaces to an entire building of mixed laboratory and support spaces.

## Our Customers

Many of the world's leading research organizations and pharmaceutical manufacturers use products from Phoenix Controls to create world-class and award-winning facilities, including:

ASTRAZENECA R&D  
Möln dal Sweden

CARLTON UNIVERSITY  
Steacie Superlab Renovation  
*2009 Lab of the Year Special Mention*

CENTERS FOR DISEASE CONTROL (CDC)  
BUILDING 110  
*2006 Lab of the Year-Special Mention*

CHICAGO BOTANIC GARDEN  
Science Center  
*2010 Lab of the Year*

GLAXOSMITHKLINE  
St. Amand Les Eaux, France

HOWARD HUGHES MEDICAL INSTITUTE  
Janelia Farms  
*2007 Lab of the Year*

JANSSEN PHARMACEUTICAL  
Geel, Belgium

THE BROAD INSTITUTE  
Cambridge, Massachusetts  
*2007 Lab of the Year High Honors*

NOVARTIS NIBR  
Cambridge, Massachusetts  
*2005 Lab of the Year*

UNIVERSITY OF ALBERTA-EDMONTON  
Health Research Innovation Facility (HRIF)

UNIVERSITY BRITISH COLUMBIA  
Life Science Center  
*LEED Gold*

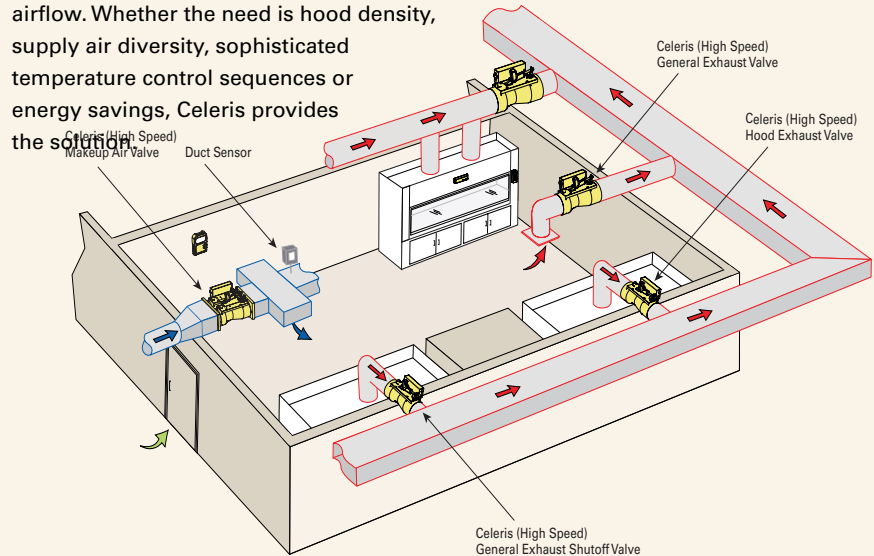
UNIVERSITY OF OTTAWA  
Guindon Hall

UNIVERSITY OF PITTSBURGH  
Biomedical Sciences Tower III  
*2007 Lab of the Year Special Mention*

UNIVERSITY OF TORONTO—MaRS  
Medical Discovery Tower

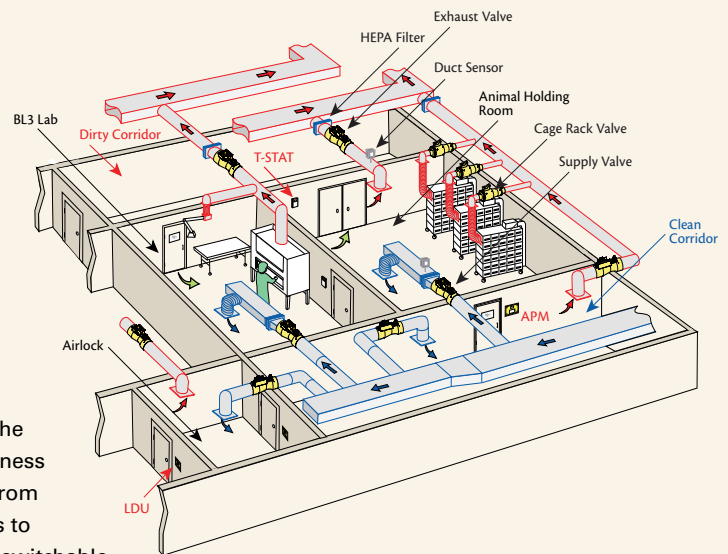
## Wet Chemistry Labs

In wet chemistry labs, accuracy and speed of response are critical to achieving proper containment, air change rate and directional airflow. Whether the need is hood density, supply air diversity, sophisticated temperature control sequences or energy savings, Celeris provides the solution.



## High-level Containment Facilities

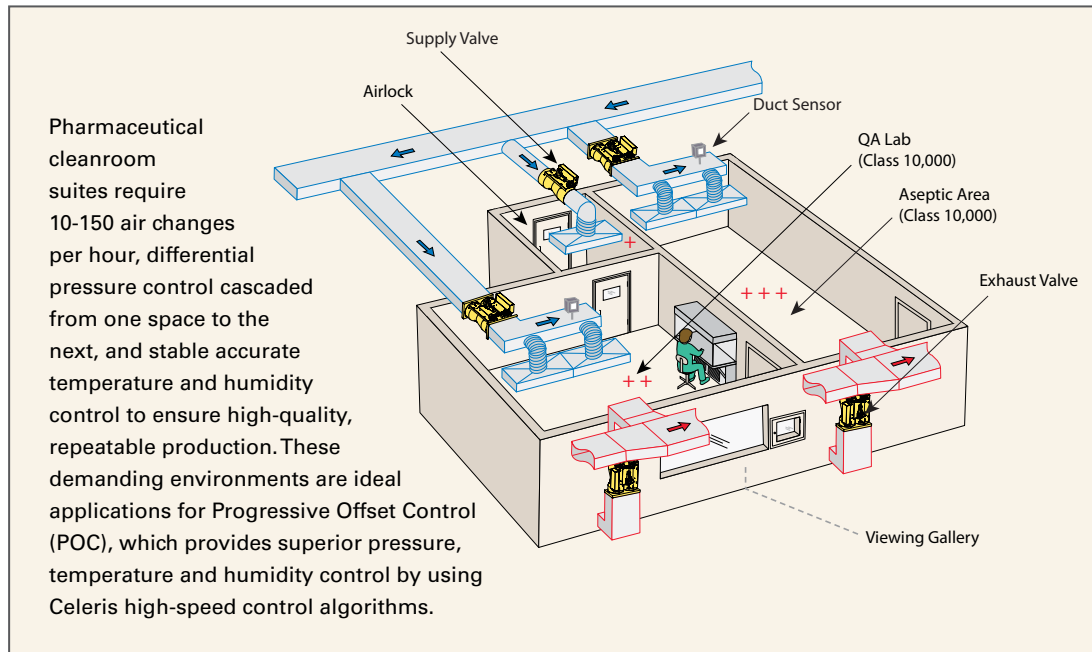
In high-level containment facilities, precise airflow control is required due to the ratio of large air change rates and small offset values based on the architectural tightness of construction. From biosafety cabinets to entire suites with switchable holding rooms, Celeris maintains proper directional airflow and space pressurization.



## CELERIS TOTAL SOLUTIONS

Add quality ancillary devices like temperature and humidity sensors, Active Pressure Monitors (APMs), communicating thermostats, and Local Display Units (LDUs). Phoenix Controls and the Celeris Family of Valves are your complete solution package for all room-level control in high-performance labs.

# Pharmaceutical Manufacturing Facilities



## Celeris Benefits Facilities with Critical Environments

Celeris is a highly configurable, feature-rich control platform that builds on accurate pressure independence and speed of response of the Phoenix Controls venturi valve. These characteristics, along with Celeris control applications, play an important role in establishing primary and secondary containment barriers. The key benefits to owners and operators of these facilities include:

### Uncompromised safety for containment and space pressurization

- **One-second speed of response**—Ensures fume hood containment and directional airflow are never compromised.
- **Accuracy**—Phoenix valves maintain  $\pm 5\%$  accuracy over the entire flow range.
- **Pressure-independent operation**—Precise airflow when duct static pressure fluctuates.

### Simplicity of design and commissioning

- **Mechanical design**—Phoenix Controls valves do not require straight duct runs, either upstream or downstream, saving thousands of dollars in ductwork.
- **System configuration**—The Celeris system is simple to configure and ready to run.

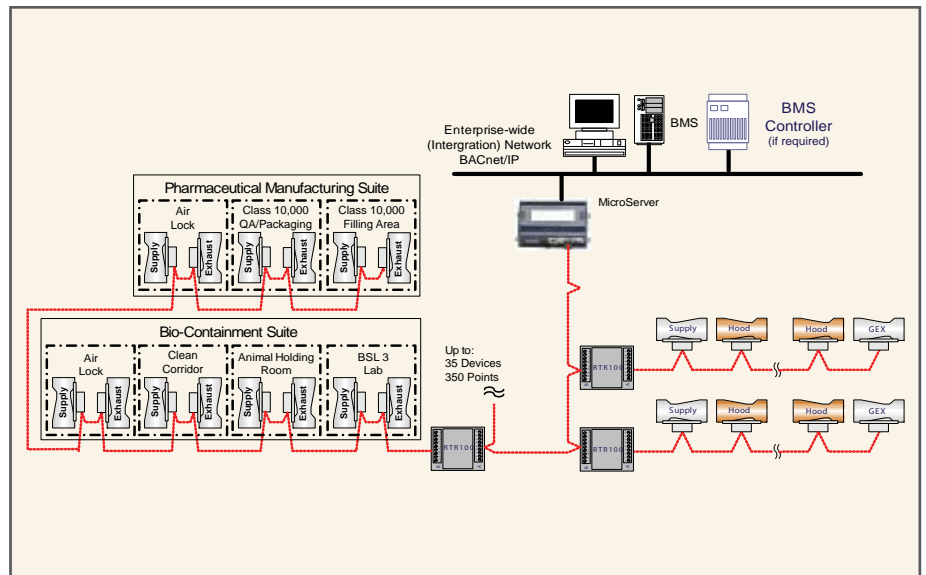
- **Less Testing, Adjusting and Balancing (TAB)**—Phoenix Controls valves are factory characterized, while terminal boxes must be field calibrated.
- **Integrate seamlessly with BACnet networks**—Use either a Phoenix Controls MicroServer or MacroServer to integrate data and provide set point control to the BMS.

### High turndown provides opportunities to save energy

- **Reduce flow when not needed**—Phoenix Controls valves provide accurate flow control over turndown ranges up to 20:1 vs. the 3:1 ratio of a traditional VAV terminal box.
- **Usage Based Controls®**—Up to 40% energy savings on unoccupied open fume hoods.
- **Demand based ventilation**—Up to 60% energy savings by reducing air change rates when IAQ monitoring indicates air quality is good.
- **Decommissioning modes**—Up to 20-30% energy savings by driving unused fume hoods to virtually zero flow.

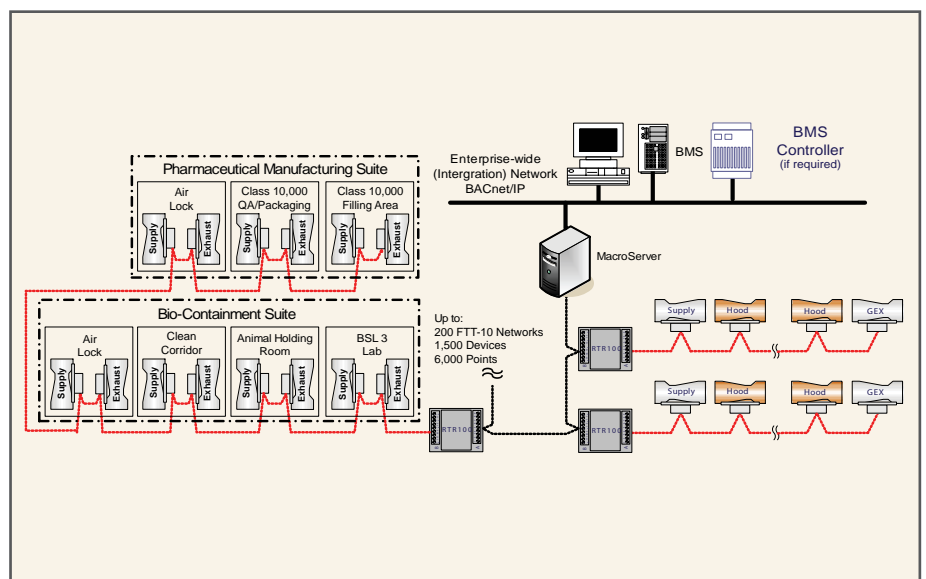
## BACnet Integration with the MicroServer

Phoenix Controls MicroServer provides an economical, yet seamless integration solution for small to medium-size lab spaces. Set points and data points for up to 35 devices are presented to the BMS through a single BACnet server.



## BACnet Integration with the MacroServer

Phoenix Controls MacroServer provides seamless BACnet integration for medium to large-scale projects. Present data and access to set point variables for up to 1500 devices through a single BACnet server connection.





Founded in 1985, Phoenix Controls is a recognized leader in the design and manufacture of precision airflow control systems for use in critical room environments. Our customers include the leading pharmaceutical companies, universities, hospitals, government research facilities and global corporations. We offer innovative airflow control solutions that combine unparalleled safety and performance with value and energy savings.

The Phoenix Controls Quality Management System is registered to ISO 9001:2000.

## **Our Core Values**

Of the values we collectively hold, we identify the following as *core* and use them to guide our behavior and decision making:

### **Excellence**

We take pride in the high standards of quality we demand of ourselves and relentlessly pursue excellence in our work, products and service to customers.

### **Integrity**

We act with honesty, fairness and ethical behavior in everything we do and are accountable by taking ownership of our actions and meeting our commitments.

### **Creativity**

Creativity is the spark of invention and the cornerstone of our organization. Our inspiration comes from an environment that embraces learning, experimentation and innovative thinking.



For additional information and a listing of our global offices, please visit our Web site at [www.phoenixcontrols.com](http://www.phoenixcontrols.com) or call (800) 340-0007.

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