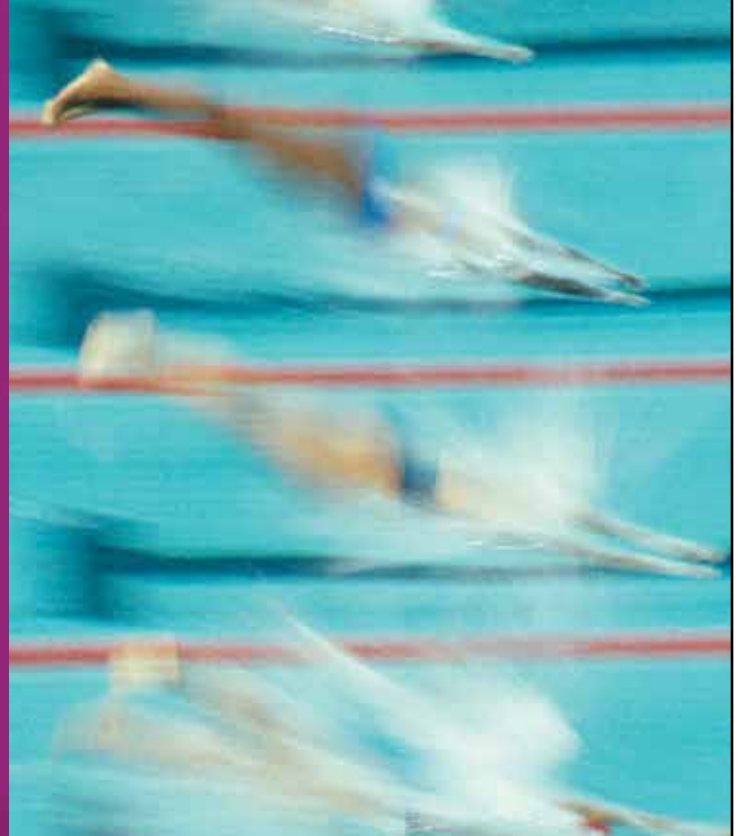




# Innovent's Custom Pool Dehumidification Units

Your best choice for swimmers,  
spectators and savvy building owners.

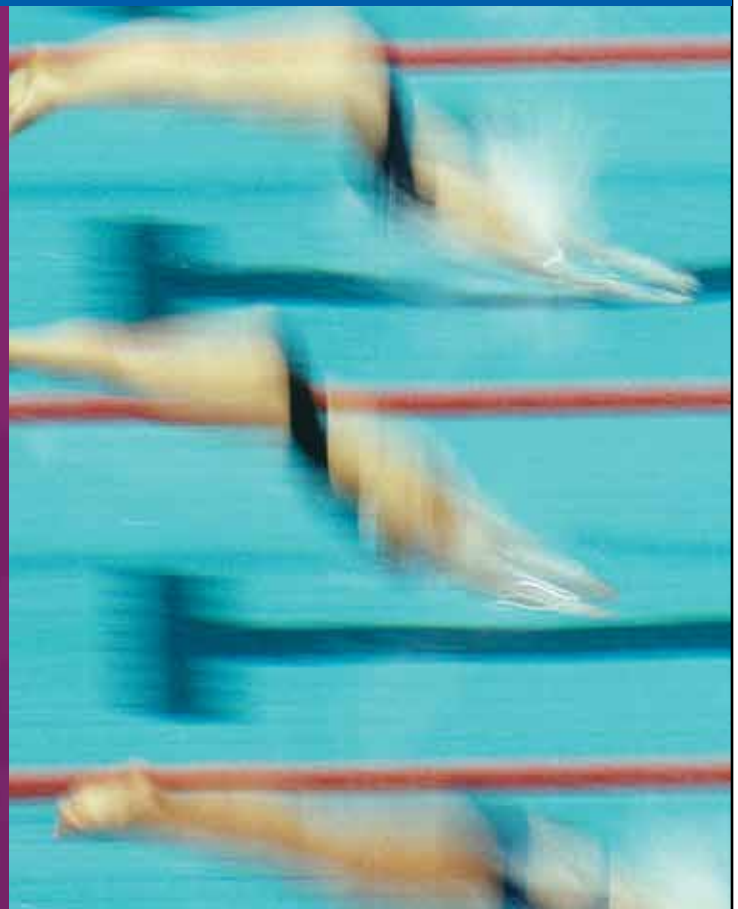
Would you like  
to provide a  
clean and healthy  
environment  
for your indoor pool while  
reducing its  
operating costs?



Then find out more about  
Innovent's custom pool  
dehumidification and  
ventilation units.



Innovent has been successfully engineering customized pool dehumidification systems for nearly two decades for some of America's most unique natatoriums, indoor pools and waterparks. Our innovative, proven systems meet building owners' needs for energy efficiency and lower operating costs while delivering a healthier and more comfortable environment for swimmers and spectators. Traditional packaged mechanical dehumidifiers simply cannot match the comfort and overall energy efficiency of Innovent's P-Series pool dehumidification units.



# Custom Engineered to Perform.

Every pool space is unique. Simply selecting or specifying an “off the shelf” dehumidification solution will not adequately address the building owner’s needs nor the engineer’s and architect’s design goals. Innovent’s customized pool units are designed to support and sustain all the distinctive qualities of your pool environment. We provide superior IAQ (Indoor Air Quality) by providing 40% – 60% more fresh air to the space than a traditional pool dehumidification system (typically called mechanical dehumidifiers). This makes the pool environment more comfortable for swimmers and spectators — and increases the building’s longevity by reducing deterioration caused by recirculating chemically-laden air.



Operational costs also are reduced by using the drying capacity of the outdoor air, in conjunction with an efficient flat plate air-to-air heat exchanger, instead of running compressors all year long.

## Why more outdoor air introduced to your pool environment results in

### ■ **Recirculating too much indoor air, without adequate amounts of outdoor air, is unhealthy.**

Inadequate ventilation increases chloramine levels and leads to a strong odor, uncomfortable “red eye” conditions for swimmers and spectators, swimmer’s cough, poor water quality and less effective chlorine that controls bacteria. According to the Centers for Disease Control and Prevention (CDC), eliminating chloramines from the pool space aids the effectiveness of pool water treatment and results in healthier indoor air.

### **What the CDC says about inadequate ventilation...\***

*“Breathing air loaded with irritants can cause a variety of symptoms depending on the concentration of irritants in the air and amount of time the air is breathed. The symptoms of irritant exposure in the air can range from mild symptoms, such as coughing, to severe symptoms, such as wheezing or aggravating asthma. It is also known that routine breathing of irritants may increase sensitivity to other types of irritants such as fungi and bacteria.*”

*The buildup of these irritants in the air is partially due to poor air turnover. The poor movement of fresh air over the pool surface, combined with the use of air recycling devices to control heating costs, leads to poor air exchange. Recyclers remove the moisture from the air, but they do not necessarily take in much fresh air.”*

\*Read the full CDC statement at <http://www.cdc.gov/healthywater/swimming/pools/irritants-indoor-pool-air-quality.html>

# Built to Last.

Innovent's high-quality construction and simplified design ensure many years of reliable performance and easy maintenance in corrosive indoor pool environments.

**1** Outside air and recirculation dampers adjust automatically to provide cost effective and independent delivery of ventilation air, temperature and humidity control.

**2** Two-inch thick R12 foam-injected panels minimize energy loss, sound transmission and casing leakage.

**3** Aluminum interior walls, flooring and dampers plus coated components extend the life of the equipment and save the owner money.

**4** Pressure gages provided across the HX simplify the air balancing procedure.

**5** All-aluminum flat plate air-to-air heat exchanger has a winter efficiency greater than 70%.

**6** Units can be provided with DX or chilled water coils for dehumidification or with no cooling coil in dry climates.

**7** Coils exposed to the pool air include a corrosion-resistant coating.

**8** High efficiency, AMCA-certified direct drive fans are provided with aluminum wheels and TEFC motors.

**9** Multiple heating options are available including gas furnaces, electric or steam coils.

**10** Packaged air-cooled refrigeration available with staged, variable speed or digital compressors.

**11** Full-height, hinged access doors provide easy access.



more comfort, more savings and better performance.

**More outside air can provide significant operating cost savings.** Our system provides reduced operational costs through dehumidification using outside air and advanced controls. Depending on climate and usage, an optimized outside air system can reduce operational costs up to 50% when compared to a traditional mechanical dehumidifier. This is achieved by taking advantage of the drying capacity outdoor air provides throughout the year.



## Optimized Outside Air

■ Minimum outside air operation dehumidifies natatorium:

- 4-5 months for the southeast
- 6-7 months in northern climates
- 9 months in dry climates (Denver)

■ Optimized outside air operation dehumidifies natatorium:

- 6-8 months for the southeast
- 9-10 months in northern climates
- 12 months in dry climates (Denver)

# Designed to Save Money

**1. Save initial equipment costs** by selecting Innovent’s simplified system that automatically ventilates, controls temperature and dehumidifies by taking full advantage of outside air temperature and dryness. In some climates, the outdoor air has enough drying capacity throughout the year to completely eliminate the need for additional dehumidification.

**2. Save installation costs** by eliminating the installation of the many extraneous components required by mechanical dehumidifiers such as refrigerant-based pool water heaters, remote condensers, pumps, valves and piping from the unit to the pool. With Innovent, the pool water temperature can be maintained with any simple, dedicated system traditionally used to heat pool water.

**3. Save operating costs** because Innovent units lower fuel and electrical costs by reducing or even eliminating the need for mechanical cooling and refrigerant-based pool water heaters. Ventilation costs also are greatly reduced through the use of a 70%+ efficient flat plate air-to-air heat exchanger, direct-drive fans and VFDs.

**4. Save maintenance costs** by providing good access to internal components, using materials and coatings that can sustain the corrosive environment, and providing a simplified system that does not intermingle dehumidification, space heating and water heating.

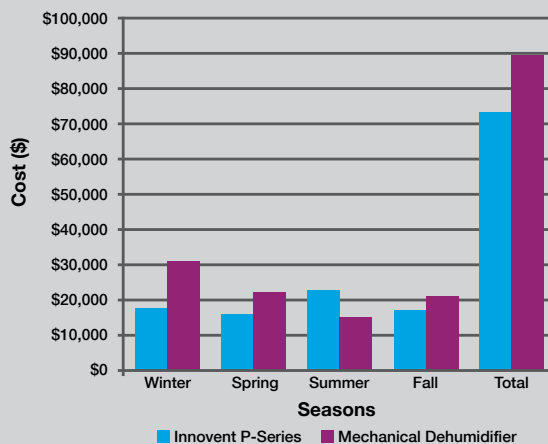
**5. Save replacement costs** due to the superior construction of Innovent’s pool dehumidification system

## How much can you save?

A 6,300 square foot competition pool in a 300,000 cubic feet natatorium maintained at 82°F and 60% RH can have the following operational cost reductions by using an Innovent pool unit instead of a mechanical dehumidifier:

- 50% in Denver (ASHRAE Climate Zone 7)
- 40% in Minneapolis, Portland and Boston (ASHRAE Climate Zones 4, 5 & 6)
- 30% in Washington DC and Kansas City (ASHRAE Climate Zone 4)
- 25% in Los Angeles (ASHRAE Climate Zone 3)
- 20% in Atlanta (ASHRAE Climate Zone 3)
- 15% in Dallas (ASHRAE Climate Zone 3)
- Similar operating cost, but IAQ advantage in Houston (ASHRAE Climate Zone 2)

**Total Operating Costs**



This chart compares the operational cost of the natatorium described above located in Atlanta. It includes the cost of pool water heating due to evaporation, space heating and dehumidification. Contact your Innovent sales representative to obtain a full energy model, showing this data and more, created for your natatorium project!

## About Innovent.

Innovent® Air Handling Equipment has provided building ventilation solutions for over 30 years. More than 10,000 custom units are serving customers in a wide range of facilities across North America including educational, institutional, industrial, recreational, retail and healthcare. Building upon our expertise and focus on energy recovery and dedicated outdoor air systems, Innovent offers a broad portfolio of custom solutions that include custom air handling as well as dehumidification for applications like natatoriums and ice rinks.

## Innovent Products:

- Custom energy recovery units (Innovent E-Series)
- Custom air handlers (Innovent C-Series)
- Pool dehumidification units (Innovent P-Series)
- Desiccant dehumidification units (Innovent D-Series)
- Replacement air handlers (Innovent R-Series)

Innovent is headquartered in Minneapolis, Minnesota at a 225,000-square-foot plant. A plant in Sacramento, California provides units to the Western United States. Distribution is through a network of carefully selected representatives, backed by expert factory support and training.



*Headquarters in Minneapolis, Minnesota.*



**Innovent**®

*Air Handling Equipment*

*Bringing the outside in.*

[www.innoventair.com](http://www.innoventair.com)

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