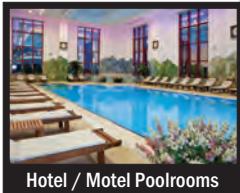


## LARGE CAPACITY DEHUMIDIFICATION SYSTEMS

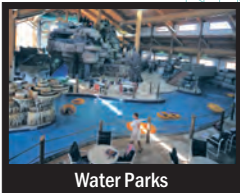
# Dehumidifiers for Large Capacity Applications



Natatoriums



Hotel / Motel Poolrooms



Water Parks



School Aquatic Facilities



Warehousing



DESERT AIRE's SA Series dehumidifiers offer you complete humidity control solutions for large indoor pool applications, water parks, warehouse, and other large moisture removal applications. Our many options allow you to control temperature and humidity while conserving energy for significant operational savings. Rely on Desert Aire for expert solutions to large capacity humidity problems.

**OPTIMIZING SOLUTIONS THROUGH SUPERIOR DEHUMIDIFICATION TECHNOLOGY**



## DEHUMIDIFICATION OPTIONS

### LARGE SELECTION

DESERT AIRE has a complete line of large commercial and industrial dehumidification systems designed to solve the toughest humidity and moisture problems. These systems remove between 55 and 340 Lb/Hr (25 to 155 Kg/Hr) of moisture.

### DUAL CIRCUIT DESIGN

The SelectAire™ Series is a dual refrigerant circuit, packaged dehumidification system that is carefully designed and manufactured for commercial natatoriums, such as: high school and university indoor pools, YMCA/YWCA, JCC and municipal natatoriums. The SA Series can also be used for other applications requiring large amounts of moisture removal.

SelectAire™ (SA) Series equipment features an exclusive exhaust air heat recovery system and patented air flow balancing. The SA system effectively addresses exhaust air energy loss in a natatorium and recovers it more efficiently than any other heat recovery method including economizer systems.

This dehumidification system features a unique dual refrigerant circuit design which allows staging to minimize energy consumption and optimize energy recovery by using different condensing elements, for the appropriate heat sinks.

At the heart of each circuit is a scroll compressor providing high performance and long life. The dehumidification section features an 8-row evaporator coil for high moisture removal capacity. The energy recovery section can have a combination of air reheat coils, water (pool or domestic) condensers or remote condensers. Auxiliary heat and a fresh air module can also be incorporated to complete a total system design.

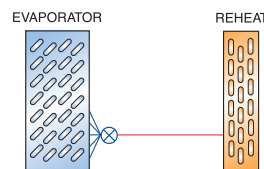
All metal frame and panels use a special corrosion resistant galvaneal metal with a powder coat finish, a tough coating that resists rusting. This process meets a corrosion resistance specification of 1,000 hours of salt spray.

SelectAire™ dehumidifiers can be installed either indoors or outdoors. Units intended for outdoor installation are factory equipped with additional insulation, heavy duty weather sealing and special rainhoods mounted on the ventilation air intake. They can also be installed on roof curbs (supplied by others) which permit bottom return and supply air to meet HVAC design specifications when required.

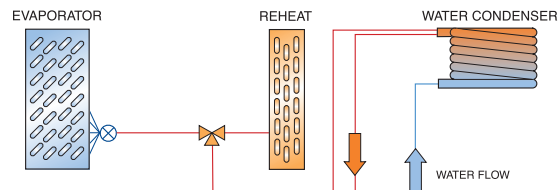
### FEATURES

DESERT AIRE's commercial dehumidifier systems are flexible in their design options. This modular concept allows each system to be customized for specific dehumidification applications. Each module type is described below.

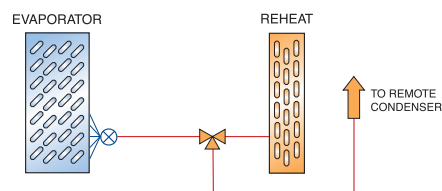
**REHEAT ONLY ...** This is the basic option which removes moisture from the air at the evaporator coil and reheats it before returning to the space as dehumidified air.



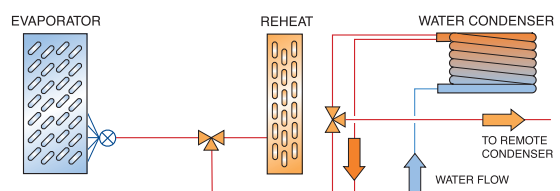
**REHEAT & WATER ...** In addition to the reheat coil, a water condensing coil is added to the circuit. Either circuit can become the primary heat sink allowing the circuit's latent and sensible heat to be directed to a water source or returned to the air.



**REHEAT & AIR REMOTE CONDENSER READY ...** This option offers a reheat coil and an air cooled remote condenser connection.



**REHEAT & WATER & AIR COOLED REMOTE CONDENSER READY ...** This is the combination of all heat sink options. It is used when only a partial water heat sink is available but full capacity dehumidification is required continuously, regardless of season.



## CONTROLS

Each circuit is controlled by the integral microprocessor-based controller. This system includes an easy-to-read user interface. A Remote Display Terminal (RDT) may be ordered separately for remote mounting.

The use of the basic control and staging sequences provides great flexibility in optimizing dehumidification and energy recovery capacity.

The system features control of all of the dehumidification functions including auxiliary heating, occupancy schedules and ventilation air. It also provides diagnostic readouts and alarms.

Optional communication cards are offered that allow the system controller to be connected to building automation system. Communication cards are offered for BACnet MS/TP, BACnet Ethernet, Lonworks, and Modbus.

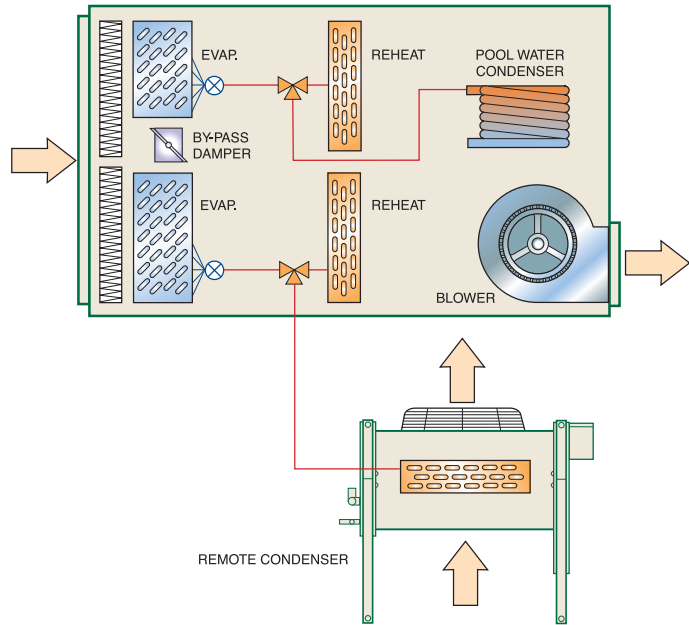
## LOWEST OPERATIONAL COSTS

There are several methods of reducing operating costs of a natatorium dehumidifier. In standard A/C applications, the use of an economizer cycle is implemented to lower operating costs. However this method does not actually achieve its objectives because it raises the initial capital costs and has hidden operational costs of the 2 fan system that is required to achieve its objectives.

Desert Aire's energy recovery system achieves the highest energy recovery of any pool dehumidifier. It uses a heat pump concept to maximize both the sensible and latent recovery. In addition it does



SelectAire™ System with Multiple Circuits



not waste conditioned air in the cooling mode like the economizer method does. Please refer to *Desert Aire Application Note # 7* for additional details of the energy savings.

## TYPICAL CIRCUIT ARRANGEMENT

A typical arrangement for an Olympic-size natatorium pool is illustrated in the figure above.

One circuit either recovers the energy to the air or water. Only one circuit is generally required to replace the heat loss of the pool water.

The second circuit allows the system to recover energy and return it to the space in the winter but reject the heat for cooling in the summer.

## EXAMPLE

Through the use of dual circuiting, DESERT AIRE can better control the recovery of energy and optimize compressor run time. The dual circuit design also allows simultaneous rejection of heat to water and air to provide zero reheat. It also allows full heat recovery through its respective and dedicated condensers that are "independent." In other words, DESERT AIRE's exclusive dual refrigeration circuits offer you the best of both worlds – simultaneous or independent heat rejection capability for unsurpassed versatility for any operational sequence. Other circuiting options are used to obtain different results.

For more information visit [www.desert-aire.com](http://www.desert-aire.com)

**DESERT  
AIRE**

## STANDARD SA SERIES FEATURES

### REFRIGERATION DESIGN

- dual, independent refrigeration circuits operate independently or simultaneously
- heavy-duty scroll compressors
- maximum of 38" coil height maximizes moisture removal
- sloped, stainless steel drain pan for each circuit
- minimum of 8" separation between evaporator and condenser coils prevents re-evaporation
- coils are designed for maximized latent removal
- R-410A refrigerant

### CABINET AND CONSTRUCTION

- base rails and supports constructed of 12-gauge steel channels
- cabinet made of 16-gauge Galvanneal steel with powder-coat paint
- removable side panels made of 16 gauge
- rated for 1000-hour salt spray
- thermal and sound insulation made of engineered polymer cell foam (EPFI)

### BLOWER

- galvanized steel mounted on pillow block bearings with grease fittings
- ODP motors

### FILTERS

- Return Air: 4" MERV 8, pleated filters
- Outdoor Air:
  - \*SA18-30: 2" MERV 8
  - \*SA35-60: 4" MERV 8

### ELECTRICAL SERVICE

- hinged electrical panel on single side access of unit
- single point power connection for all units

### CONTROLS

- duct or wall mount temperature and humidity sensors
- Integrated Display with an optional remote display terminal
- BAS communication options
- built in time clock for standalone operation

### WARRANTY

- 2 Year parts warranty
- Electrofin Coated coils include (5) year parts warranty

## SA SERIES OPTIONS

### COATINGS

- Coil Electrofin E-Coat to resist chemicals and corrosion

### AUXILIARY HEAT

- hot water coil supplied downstream from hot gas reheat coil
- steam coil supplied downstream from hot gas reheat coil
- electric SCR heat supplied downstream from hot gas reheat coil
- control outputs for field supplied auxiliary heating devices

### INSTALLATION LOCATION

- indoor
- outdoor
- rooftop (for downflow applications)

### CONDENSER (CHOOSE PER CIRCUIT)

- air-cooled remote condenser rejects excess heat to the outdoors (full THR - Total Heat of Rejection)
- water condenser for chiller or fluid cooler

### POOL WATER HEAT

- coaxial heat exchanger for recovery of heat to pool water

## OPTIMIZING SOLUTIONS THROUGH SUPERIOR DEHUMIDIFICATION TECHNOLOGY

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