



## Efficient Humidity Control For Critical Environments

Dehumidification is of critical importance in hospitals and other healthcare facilities for several reasons including the demand for large volumes of ventilation air, the control of micro-organism growth, and the challenge of balancing the environmental comfort levels of patients and hospital staff. MSP Technology's high efficiency equipment is perfectly suited to this environment, providing reliable facility dehumidification using up to 50% less energy than competitive systems.

Dehumidification can help reduce the number of harmful microorganisms that exist in a hospital environment as they need water to grow, initially, and survive for longer periods in humid conditions. Humidity must also be controlled inside ductwork and ASHRAE Standard 62 recommends keeping relative humidity below 70% within ducts in order to minimize potential for growth of harmful bacteria.

Humidity control is also important when attempting to balance comfort levels between patients and staff - occupants which have competing demands for environmental conditions. At lower dew point, a higher temperature will satisfy a larger population of Hospital occupants. Active staff members will stay more comfortable as moisture is more rapidly transferred outward through clothing. The lower relative humidity will allow higher dry bulb temperatures and provide more comfort for the patients.

This scenario is particularly applicable in the Hospital operating room, where the surgeon is subject to long active hours under radiant heat from lighting and equipment, while the patient's thermal condition requires moderately warm temperatures. Maintaining a low dew point in the operating room allows additional heat transfer from the surgeon through perspiration, while the sensible temperature can be moderated for patient comfort.

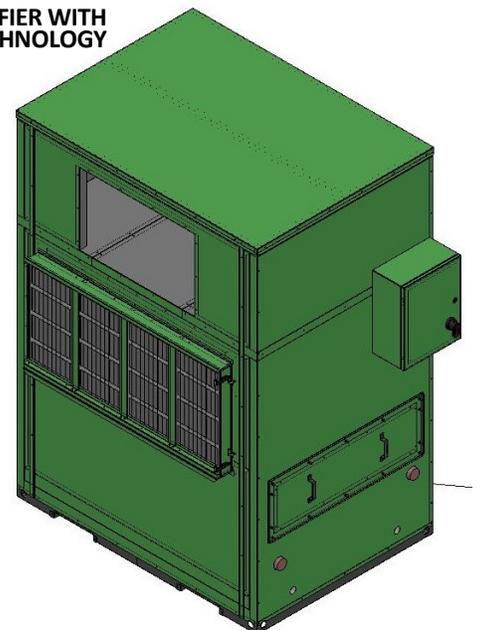
An additional consideration, which is of particular importance in light of the large outside air volume requirements, is the recommendation that supply air humidity be brought well below the desired room conditions. This is done so that condensation occurs less frequently on the indoor cooling coils, reducing potential for bacteria growth.

With 24-7 operating hours, large outdoor air volume requirements, and air handling system efficiency and reliability of primary concern, Hospital applications are best addressed using MSP® Dehumidification equipment.

## ▶ Key Benefits & Features

- **Reliable** Simple Technology, No Moving Parts, Low Maintenance
- **Performs** Delivers consistent low dew-point temperatures
- **Sanitary** Full Draining, No Standing Water
- **Efficient** Cuts dehumidification operating costs by up to 50%
- **Fast ROI** Lower capital costs, Competitively priced
- **Versatile** Chilled Water and Refrigerant units
- **Advanced** Single unit provides dehumidification, sensible cooling, heating and ventilation air
- **Flexible** Horizontal, Vertical and Modular configurations for uses with space or access issues

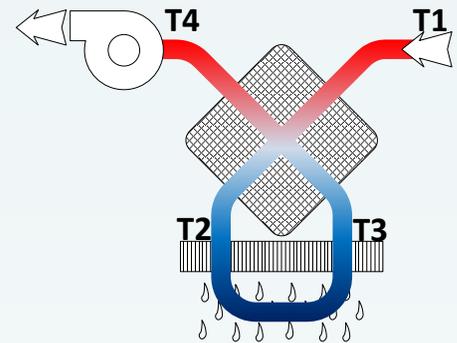
DEHUMIDIFIER WITH  
MSP®TECHNOLOGY



## ABOUT MSP® TECHNOLOGY

MSP Technology is offered in a wide range of super-efficient, industrial grade equipment. Designed specifically for green applications, MSP products are engineered for high performance, guaranteed.

## ABOUT MSP® AWG AND DEHUMIDIFICATION TECHNOLOGY



**STEP 1** Warm, humid incoming air (T1) flows through the first pass of the plate type air-to-air heat exchangers for pre-cooling and initial dehumidification. This is accomplished by regenerative thermal exchange with the cooler air that is leaving the heat exchanger. (see step 3)

**Advantage:** Pre-cooling and dehumidification by regenerative thermal exchange are "free" and involve no additional equipment.

**STEP 2** Pre-cooled air (T2) then passes twice over conventional cooling coils for final cooling and dehumidification.

**Advantage:** Pre-cooled and pre-dehumidified air can be treated much more efficiently, using smaller compressors that require as little as one-half the power.

**STEP 3** The cool, dehumidified air (T3) is then drawn back through the opposite side of the heat exchanger where it absorbs some heat from incoming air (see step 1) and continues on to the building's HVAC system.

**Advantage:** No heating coil—and no energy penalty—needed to reheat the dehumidified air before it enters the conditioned environment.

## Feature Highlights

### High Efficiency

Cuts dehumidification operating costs by up to 50%

### Low Maintenance

Direct Drive Fans, No belts and pulleys to adjust

No moving parts in airstream (except fan)

### Versatile

Horizontal or Vertical configurations

chilled water or refrigerant

### Sanitary

Full Draining, no standing water