

News

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CARRIER OFFERS SOLUTION TO HUMIDITY PROBLEMS
WITH ITS UNIQUE HUMIDI-MIZER™ SYSTEM

(DALLAS, Tex. – January 30, 2007) – High humidity can be a leading cause of building discomfort. Historically, packaged equipment has been selected to control temperatures within a building, but the dehumidification capability of “off-the-shelf” rooftop equipment was assumed to be somewhat “fixed” based on the unit’s sensible heat ratio. Today, the market wants competitively priced packaged equipment that can respond to temperature and/or humidity space demands.

One of the greatest design challenges is to maintain comfort, including indoor humidity, for occupants year round. The challenge becomes increasingly difficult since occupants tend to have different comfort thresholds.

Designing an HVAC system to address only the peak sensible conditions may not appropriately handle humidity during instances when the temperature is below the setpoint but humidity levels remain high. Although this method has long been the industry standard for design, it has significant shortcomings.

This design challenge is further complicated if occupancy levels are highly variable. The sensible and latent heat removal required from the space thus varies and requires a system that can adapt.

The Carrier Humidi-MiZer™

Carrier Corp., a global leader in the manufacture and sale of heating, ventilating and air conditioning (HVAC) systems and products, has introduced a product to address these challenges. The Humidi-MiZer™ adaptive dehumidification system provides operational flexibility and superior humidity control for maintaining comfortable indoor temperature and humidity levels year-round.

Unlike a traditional reheat system, the Humidi-MiZer derives more refrigerant subcooling from the combination outdoor and Humidi-MiZer coils. As the refrigerant entering the indoor coil is much colder than normal, the temperature of the indoor coil is well below the entering air dew point, which allows more water to be removed from the air.

"It's not merely a reheat unit," said Ron Woodcock, product business manager, Light Commercial Systems, North America. "We're actually dropping the indoor coil temperature to get more water out before the reheat. That's a very key attribute to the performance of this unit. "

The Humidi-MiZer allows for multiple modes of operation for the rooftop unit. These modes are: a standard cooling-only mode; a cooling mode with a

minimal amount of re-heat; a cooling mode with full re-heat; or a combination of these modes if the unit is equipped with multiple refrigerant circuits. This unique and innovative design provides the capability for the rooftop unit to adapt to various building needs.

Operating Modes: Cooling, Subcooling and HGRH

In the cooling mode, the rooftop unit operates with a standard refrigeration cycle with no re-heat provided. This mode is initiated when the thermostat / humidistat signals a cooling need and humidity levels in the space are below the setpoint.

When the space signals a call for cooling and the humidistat senses high humidity, the unit goes into the subcooling mode. In the subcooling mode, liquid refrigerant from the condenser passes through the Humidi-MiZer coil which is exposed to the cold supply air flow from the evaporator coil. This cold air is then partially re-heated by the Humidi-MiZer coil and is supplied to the space at temperatures above normal cooling mode conditions (ex. 60 to 62F range). Thus, this mode supplies both sensible cooling and enhanced de-humidification.

When the space temperature is satisfied, but space relative humidity is above the RH setpoint, the unit operates in the hot gas reheat (HGRH) mode. In this mode, the refrigerant in the Humidi-MiZer coil is a combination of liquid from the condenser and hot gas from the compressor. With the extra heat contained in the hot gas, the conditioned air is reheated back to neutral air, near room conditions (ex: 72 to 75F).

The Humidi-MiZer is an all-inclusive factory-installed option that can be ordered with Centurion™ 48/50PG, or Weathermaster® 48/50HJ rooftop units. Ultimately, the Humidi-MiZer gives the rooftop unit up to four different steps of unit sensible heat ratio to allow it to automatically adjust to the sensible heat ratio of the building.

“In the past, you would need a customized, built-up system and, most likely, additional labor costs,” Woodcock said. “The Humidi-MiZer is part of a packaged rooftop that comes straight from the manufacturer. The controls are simple, the unit is prepackaged, and there is no assembly required. It is an adaptive humidity option that allows the rooftop unit performance to change with the demands of the space. The cost is low, and the reliability is high.”

For more information on Carrier’s Humidi-MiZer adaptive dehumidification system, contact a local Carrier dealer or distributor.

About Carrier Corporation

Carrier Corp., headquartered in Farmington, Conn., is the world’s largest provider of heating, air conditioning and commercial refrigeration solutions with operations in 172 countries. It is a subsidiary of United Technologies Corp. (NYSE:UTX), which provides a broad range of high technology products and support services to the aerospace and building systems industries worldwide. For more information on Carrier products, visit www.carrier.com.