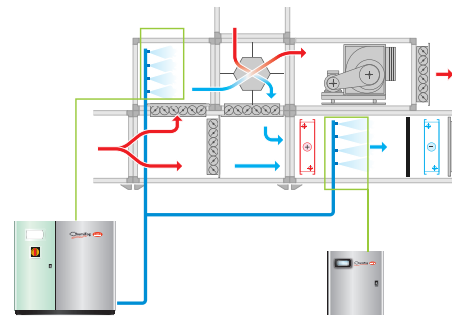
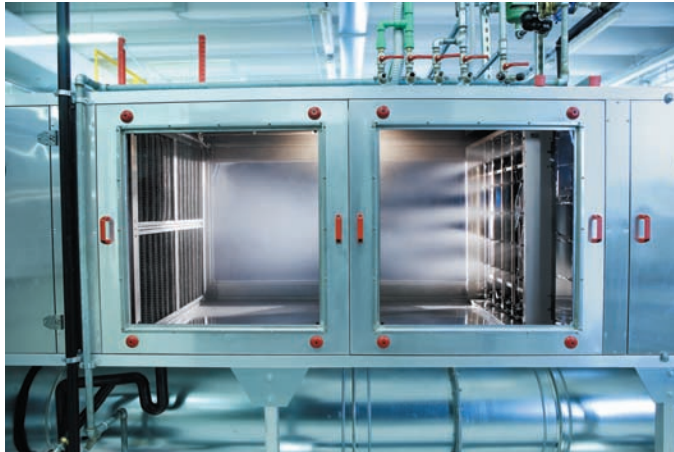


Humidification Control

provides energy efficiency of data centres and buildings



Typical adiabatic cooling system providing 10-12C of cooling

Using the CAREL range of humidifiers Humidity Solutions project managed, installed and commissioned the High pressure water adiabatic humidification system within the plenum serving a high profile data centre.

The high heat gains generated by the equipment can easily cause the relative humidity of the return air from the data hall to fall as low as 15-20% rH. The recommended lowest limit value for avoiding a significantly high risk of electrostatic discharge is 40% - 45% rH, therefore humidification is essential to increase the moisture levels of the air to an acceptable level avoiding dangerous electrostatic discharges which can have catastrophic effects.

By controlling the air temperature and humidity, the server components at the board level are kept within the manufacturer's specified temperature/humidity range. Products such as Electric steam and Gas steam humidifiers are still favoured choices owing to their low cost and control precision, but have high energy requirements and expensive on-going maintenance costs. This is no longer the preferred choice when minimal power consumption and the most energy efficient design is required.

The HumiFog Adiabatic System represents the latest generation of high tech atomising humidifiers and sets new benchmarks for energy efficiency, control precision and hygiene. HumiFog uses a special pump to deliver water at high pressure through stainless steel nozzles and produce a very fine and uniform fog. The droplets generated then spontaneously evaporate, humidifying and cooling the air. The sophisticated

control system combines the action of an inverter, which controls the pump flow-rate, and a series of solenoid valves that activate only the nozzles required to provide a precise and wide modulation range.

Although ideally suited to Data centre applications this system is perfect for many office or research buildings utilising the advantages of the system that includes each litre of water evaporated using only 35 watts of power which provides humidity control and cooling of the air. This can provide a saving of upto 690 watts of energy which would otherwise be used by the chillers or air conditioning serving the space to provide the same cooling effect.

High precision control at +/- 2%rh over a range of capacities from 60 – 5000kg/hr with Certified Hygiene for use in air conditioning and hospital applications makes this system a perfect solution to solve many cooling or humidity problems.

The atomising racks are straight forward to install and allow the lines to be drained and automatic flushing to ensure hygiene standards are continuously met. The systems then distribute the demineralised water, to prevent dusting and reducing maintenance, at a pressure of 70 bar to the nozzles.

This project has won several Environmental and renewable project awards including the CIBSE low carbon award and HVAC project of the year.

The front cover shows a Humifog high pressure water humidifier in operation within an air handling unit providing humidity control and adiabatic cooling.

Humidity Solutions Ltd
.....the solution is clear

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