



# Data center humidification and cooling

Humidification and Evaporative Cooling

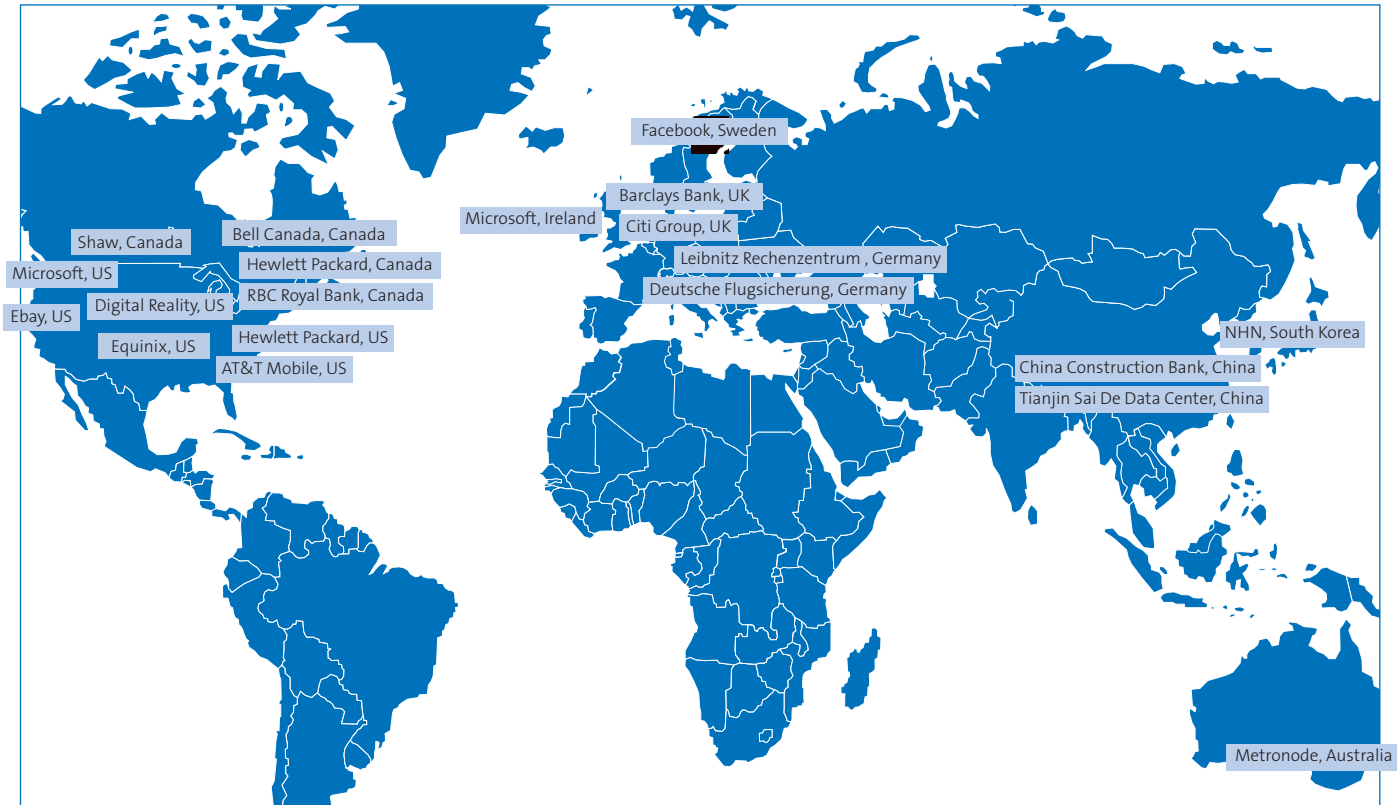


# TRUSTED TECHNOLOGY

Nortec humidifiers and evaporative coolers are used in data centers around the world to provide humidity control, prevent electrostatic discharge

(ESD) or offer high capacity, low cost evaporative cooling. Some of the World's largest brands put their trust in Nortec humidification systems to

help them fulfil their data centers' environmental control strategies.



# GLOBAL EXPERTISE, LOCAL SOLUTIONS

Nortec has manufacturing facilities in Canada, UK, Denmark, Germany, Switzerland and China as well as wholly-owned sales operations in 13 countries and distributors in over 40 more.

The company has been serving the global data center industry for more than 25 years. It has a dedicated Data

Centre Business Development Team that draws expertise from all corners of the organization, benefiting clients no matter where they or their projects are located.

Regional R&D departments work with project teams to develop bespoke solutions, while our specialized Nortec service engineering team provides the

comprehensive maintenance support critical environments require.

Nortec's experience across many major global data center projects is brought to bear from initial concept discussions through to installation, commissioning and beyond.

# EVAPORATIVE COOLING

A single Nortec adiabatic humidifier can deliver up to 2.1MBtu/hr (630kW) of evaporative cooling while operating on less than 0.4 HP (0.3kW) of electricity. This technology increases the cooling capacity of a data center's ventilation system and extends the use of free air cooling into periods when the outside air alone is too warm to meet the required internal conditions. Nortec humidifiers are used to deliver low energy evaporative cooling directly to incoming fresh air as well as being incorporated into in-direct evaporative cooling systems. These reduce the temperature of incoming air without raising its humidity by humidifying exhaust air and transferring its resultant cool thermal energy into the incoming air via a heat recovery system.

Nortec evaporative cooling solutions incorporate intelligent water management systems to ensure hygienic operation and to reduce water usage while minimizing maintenance.

These low energy cooling techniques can significantly reduce or even eliminate the need for mechanical cooling in data centers with a resultant drop in PUE.

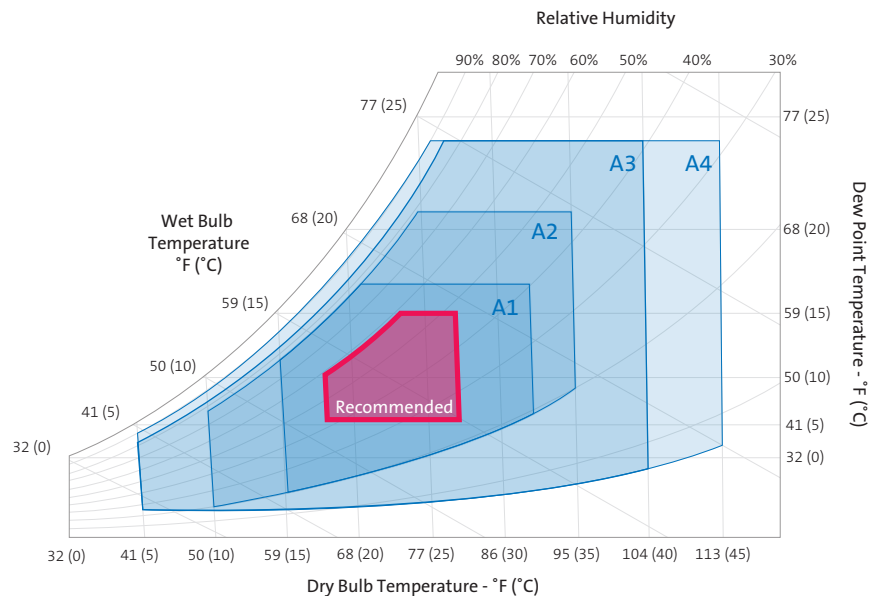
- Reduce running costs
- Extend operating hours in free cooling
- Green solution
- Intelligent water management



# HUMIDIFICATION

Humidity control in data centers is required to prevent ESD from damaging electronic equipment. For existing data centers ASHRAE recommends a humidity level of 41.9°F (5.5°C) dew point to 60%RH and an allowable range of between 20-80%RH (see fig 1). Nortec has a comprehensive range of humidifiers to help data center operators meet ASHRAE's standards, including innovative low energy adiabatic systems that can utilize heat from the data halls to minimize humidifier energy consumption.

- Reduces chances of electrostatic discharge



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# SOLUTIONS FOR DATA CENTERS

Nortec has a comprehensive range of humidification and evaporative cooling products to suit any data center's environmental control system.

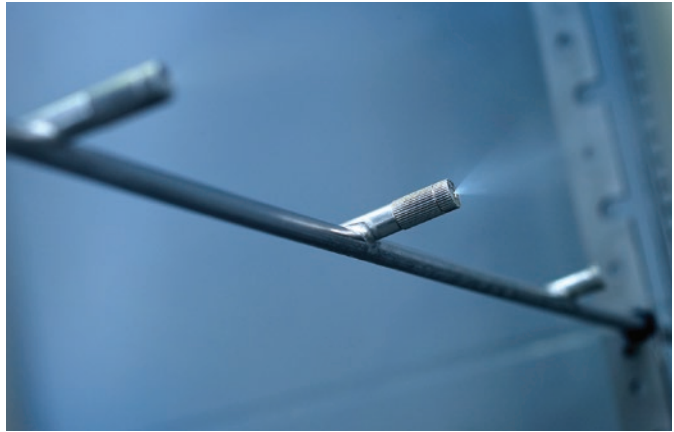
From an individual in-room steam humidifier to large in-duct evaporative systems, refurbishments of air handling units to newly constructed buildings or

modular data centers, Nortec has the technology and expertise to provide the ideal solution.

**ME-Series** Media Evaporative cooling and humidification



**HP-Series** High Pressure evaporative cooling and humidification



**NH-EL / MES-U** Steam humidification

**DL-Series** Hybrid Low Pressure and Media Evaporative cooling and humidification

As a leading manufacturer of commercial/industrial humidification systems for more than 40 years, Nortec has the technology and application expertise to meet the needs of any application.

**Contact us today and ensure you have the best humidification and cooling solutions for your data center.**

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