

Sustainable cooling solutions:

EVAPORATIVE COOLING TO REDUCE ELECTRICITY CONSUMPTION IN DATA CENTRES

CATEGORY:

Data Centres

THE CONTEXT:

Data centres are expected to grow steadily due to the constant digitalization of more and more aspects of our daily lives. They receive, treat and dispatch huge quantities of data in extremely short computational time spans: in fact, they are designed to do humongous processing of information in fractions of milliseconds because their outcomes, be they a GPS position or a financial transaction, are required at once. High computational capacity translates into high quantities of electric energy used by data centres, currently at around 3+% of worldwide energy production; and where there is a lot of energy being used, there is also the side effect of a lot of heat to be dissipated otherwise the data centre could overheat and malfunction. Cooling is essential for data centres to reject the heat they generate. Since cooling requires energy (around 40% of the total data centre's input energy), it must be done in a sustainable way to minimize its impact on the data centre's overall energy draw.

SUSTAINABLE COOLING SOLUTION:

- Two 320-L/h humiFog high-pressure atomizers have been installed in the supply air streams of Custodian's data centre located in Kent, UK
- The atomizers spray a fine mist of RO water at max. 70 bar: the droplets (around 18 µm in diameter) enter the air streams and evaporate thus cooling and humidifying the air
- The atomizers can modulate the sprayed water flows to adapt to the actual needs

BENEFITS:

- Significantly reduced electricity consumption compared to the existing DX cooling equipment: 3 kW for humiFogs vs. 250 kW for the DX coils
- Lower Power Usage Effectiveness (PUE)
- High profitability, even after including the water cost, due to reduced electricity consumption
- Controlled humidification to the recommended minimum ASHRAE levels is guaranteed in dry periods while cooling at the same time

TOPIC:

- Energy Efficiency

GENERAL INFORMATION

NAME OF THE COMPANY: CAREL Industries SpA

CONTACT PERSON:

Raul Simonetti



HYPERLINKS TO LEARN MORE ABOUT THE SUSTAINABLE COOLING SOLUTION:

- [Video](#) by Custodian Data Centres
- [Description](#) by Custodian Data Centres
- [Custodian Data Centres describe CAREL cooling solution as the 'only choice'](#)