CASE STUDY

Munters

Oasis delivers optimal climate control for Equinix

Equinix London, England
Equinix Melbourne, Australia

Equinix is one of the world's largest data center operators and internet exchangers. Equinix data centers in Melbourne, Australia (ME1) and Slough, London (LD6) are using Munters Oasis indirect evaporative cooling (IEC) to achieve world-leading, sustainable server climate control.

Munters helps meet growing demand

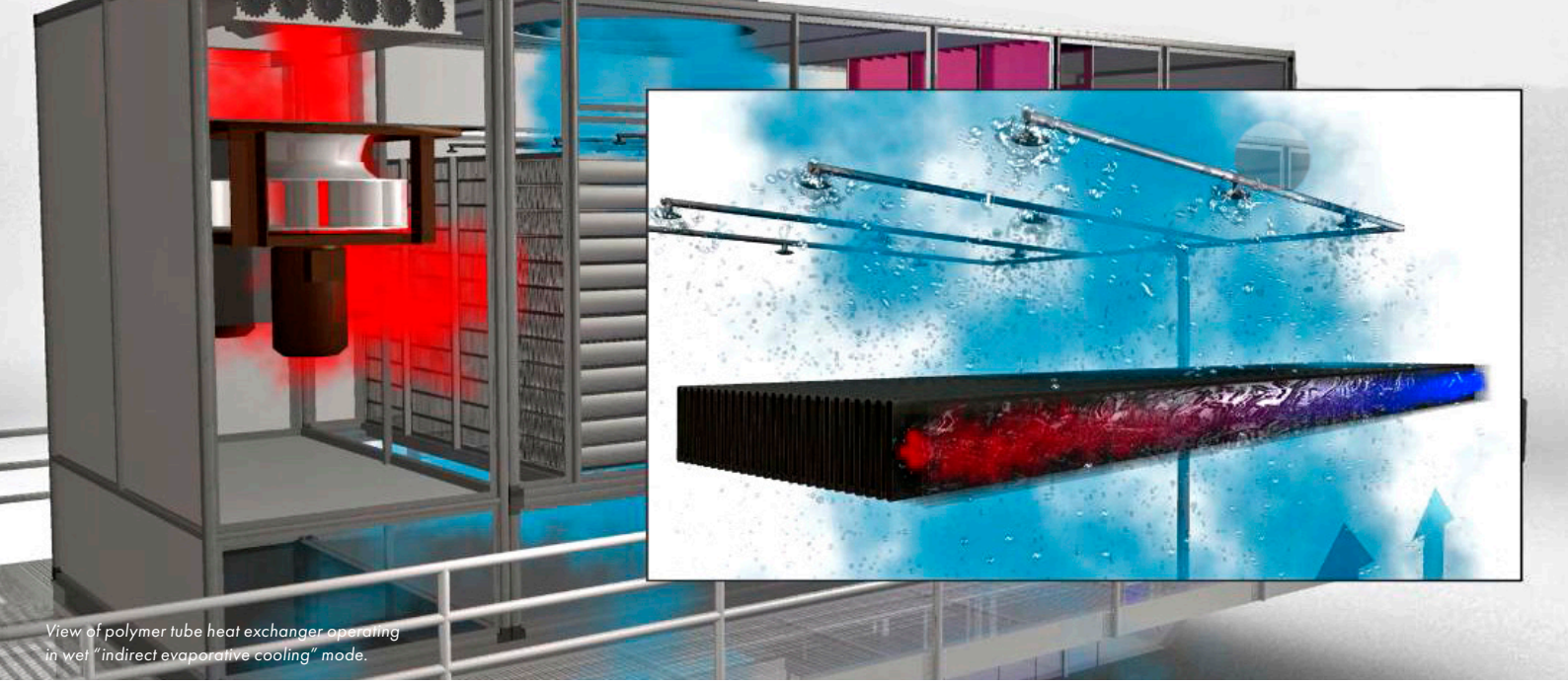
The two data centers meet demand from Equinix's customers in financial services, cloud and enterprise segments. Six Oasis systems for ME1 and forty Oasis systems, including four make-up air (MUA) units, for LD6 are at the heart of Equinix's air treatment design and contribute towards lower energy consumption and a reduced carbon footprint.

Case study

- Oasis IEC leads the way in data center energy-efficiency and air quality

Advantages:

- High efficiency cooling and reduced back up power
- Annualized cooling pPUE of 1.06 and annualized project PUE of 1.2
- Data center air fully separated from outdoor air
- Lower capital costs on mechanical refrigeration and switchgear



View of polymer tube heat exchanger operating in wet "indirect evaporative cooling" mode.

Indirect evaporative cooling solution chosen

Equinix's investment in ME1 and LD6 data centers utilizes Oasis' award-winning, innovative patented indirect evaporative heat exchanger and 100% natural ventilation.

The natural choice for cooling

Evaporative cooling is one of nature's fundamental methods of cooling. It is the same cooling principle that our body uses when moisture (sweat) evaporates and cools the skin. Munters Oasis IEC cooling systems take advantage of evaporation to reject heat without adding moisture to the data center.

How it works

Hot air leaving the servers is kept separate from cool air supplied to the server. Air from the data center is cooled using Munters' patented Oasis polymer heat exchanger, often without the need for supplemental mechanical cooling or water. Oasis operates in three modes, depending on ambient temperatures.

On cold and cool days, Oasis operates dry and simply acts as an air-to-air heat exchanger. Outdoor air (commonly referred to as scavenger air) indirectly cools the data center air through normal heat exchange, without the use of any water. Once the ambient temperature rises to a certain point, the Oasis will not be able to provide enough cooling while operating in this dry mode. When this happens, water is pumped from sumps that are internal to the air handlers to spray nozzles that wet the outside surface of the Oasis heat exchanger tubes, coating them with a thin layer of water.

The scavenger air evaporates water on the exterior of the tubes, which causes heat to be extracted from the recirculating data center air flowing internal to the tubes. In this evaporative mode, the Oasis can cool the recirculated air even when outdoor temperatures are high.

Low annual pPUE

During the few hours a year when outdoor temperatures are too high and humid for evaporative cooling alone, a small, chilled water mechanical cooling system supplements the evaporative cooling (trim DX option also available), so that the air supplied to the data center is maintained at the right temperature.

Because the Oasis IEC is a recirculating system, the data center is cooled without the introduction of outdoor air pollutants that might adversely impact the servers. Equinix operates their data center supply air temperatures at 20ºC to achieve a cooling pPUE of below 1.06 and a total project PUE1 of 1.2 using the Munters system. Each Oasis includes its own integral controller to manage the free-cooling operation and chilled-water top-up to ensure the most efficient and economical operation. The units will be networked together to ensure consistent cooling capacity under N+ or N conditions.

A money-saver

Equinix quickly identified Munters Oasis IEC technology as a leading, highly-efficient cooling system compared to conventional water-cooled chiller and CRAC systems. "LD6 is a hugely exciting project. We are committed to providing continuous improvement for our customers and set new standards in efficiency and sustainability," said Russell Poole, managing director of Equinix UK.

Oasis not only saves energy year-round but reduces capital costs as the amount of mechanical cooling, sizing of generator sets and copper wire, power switching gear, etc., is significantly lower.

Would you like to find out if Munters has a solution for your company too? If so, please visit our website, www.munters.com