



Case study: Equinix Oasis™ IEC leads the way in data centre energy efficiency and air quality

Oasis™ IEC benefits:

- High efficiency cooling
- Annualised cooling pPUE of 1.06
- Data centre air fully separated from outside air
- Lower capital costs on mechanical refrigeration and switchgear
- Reduced back up power
- Annualised project PUE of 1.2

Equinix use Oasis™ Indirect Evaporative Cooling

Equinix, one of the world's largest data centre operators and Internet exchanges is set to open their first ME1 data centre in Melbourne Australia and sixth London data centre LD6 in Slough . The company will use Munters Oasis Indirect Evaporative Coolers at both sites to achieve world leading sustainable server climate control.

The two new data centres will meet demand from Equinix's customers in financial services, cloud and enterprise segments. Both data centres aim to be accredited in Leadership in Energy & Environmental Design (LEED), with LD6 designed to achieve platinum level.

Six Munters Oasis DCIE systems for Melbourne's ME1 and forty Oasis IEC 200 systems inc four MUA units for LD6 Slough are at the heart of Equinix's air treatment design, and will contribute towards lower energy consumption and carbon footprints.

Munters Oasis IEC 200's will supply over 8MW of cooling for the IT Load for the first phase of LD6. The new LD6 data centre will provide a capacity of 8,000 square metres equivalent to housing 2,770 server cabinets.

With the help of the Munters Oasis units, ME1 and LD6 will become amongst the most energy efficient data centres in Australia and the UK.

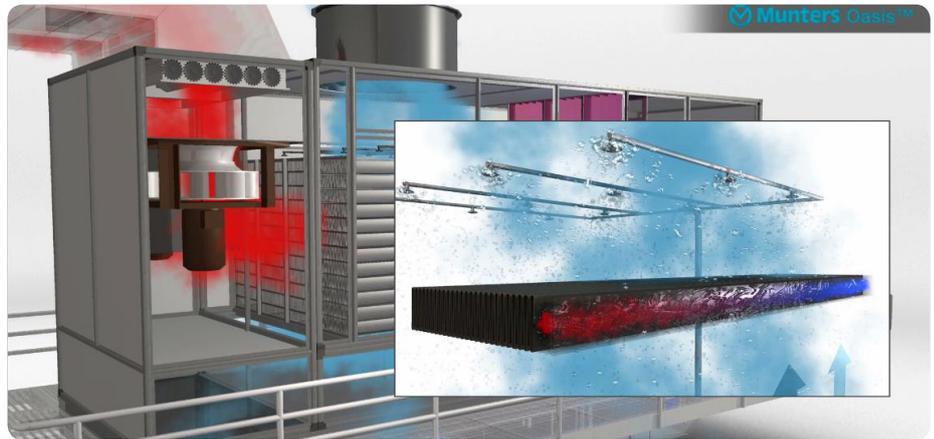
Equinix's investment in ME1 and LD6 data centre utilises Oasis's award winning innovative patented indirect evaporative heat exchanger and 100% natural ventilation.

"LD6 is a hugely exciting project; the facility will be the most advanced data centre in the UK. 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.

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. The Munters Oasis™ Indirect Evaporative Cooling systems take advantage of evaporation to reject heat without adding moisture to the data centre.

The hot air leaving the servers is kept separate from the cool air supplied to the server. With Munters Oasis™ systems, the air from the data centre is cooled using Munters patented Oasis™ polymer heat exchanger often without the need for supplemental mechanical cooling or water. Munters Oasis™ Indirect Evaporative Coolers operate three modes, depending on ambient temperatures.

On cold and cool days the Oasis™ polymer heat exchanger operates dry and simply acts as an air-to-air heat exchanger. Outside air (commonly referred to as scavenger air) indirectly cools the data centre air through normal heat exchange, without the use of any water. Once the ambient temperature rises to a certain point, the Oasis™ heat exchanger 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™ heat exchanger is able to cool the recirculated air even when outside temperatures are high.

During the few hours a year when outside temperatures are too high and moist 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 centre is maintained at the right temperature.

Because the Oasis™ IEC is a recirculating system, the data centre is cooled without the introduction of outdoor air pollutants that might adversely impact the servers. Equinix are predicted to operate their data centre supply air temperatures at 20°C to achieve a cooling pPUE of below 1.06 and a total project PUE1 of 1.2 using the Munters system.

Each Oasis™ IEC 200 will include its own integral controller to manage the free cooling operation and CHW 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.

This award winning and low energy Oasis™ IEC technology not only saves money year round, but reduces capital costs as the amount of mechanical cooling, sizing of generator sets and of copper wire, power switching gear etc. is significantly lower.

This highly efficient cooling system saves annual power and consumption compared to conventional water-cooled chiller and CRAC systems.

To view the movie on how Oasis™ IEC works, see the Munters reference list of 115MW installations or local Munters data centre specialist look on

munters.com/equinix



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