



## ABOUT THE COMPANY

NEXTDC is an ASX200-listed technology company enabling business transformation through innovative data centre outsourcing solutions, connectivity services and infrastructure management software.

As Australia's leading independent data centre operator with a nationwide network of Tier III and Tier IV facilities, NEXTDC provides enterprise-class colocation services to local and international organisations. With a focus on sustainability and renewable energy, NEXTDC is leading the industry with award-winning engineering solutions for energy efficiency and NABERS 4.5 star certification.

### Case Summary

**Location:** Australia

**Vertiv Solutions:**

- Liebert® EFC300

**Situation:**

Australian businesses are transitioning to more cloud and hybrid IT solutions to enable new and innovative digital services and take the pain away from managing IT infrastructure. NEXTDC plays a vital role in enabling that transition, satisfying the ever-growing demand for data storage, transmission and processing by providing enterprise-class colocation services to local and international organisations throughout the country.

The company recently opened its latest data centre, M2 Melbourne, which is delivering significant new capacity and access to a host of world-leading cloud services for organisations in Melbourne and surrounding areas.

Like any state-of-the-art data centre, M2 requires the highest quality in cooling to maximise efficiency and ensure the continuous operation of the physical assets within the facility. However, NEXTDC had bigger ambitions than just a standard facility – it set out with the goal of making M2 the most reliable and energy efficient data centre in the country built using Indirect Evaporative Free Cooling air handling units (AHUs) to International Electrotechnical Commission (IEC) standards.

NEXTDC selected the Liebert® EFC 300 solution from Vertiv and the company's dedicated service team to help it meet this goal and to achieve the lowest possible power usage effectiveness (PUE) numbers, ensuring maximum energy efficiency and operational savings.

### The Solution

To verify that its design for M2 could deliver as promised, NEXTDC had the facility undergo rigorous on-site audit and testing by Uptime Institute. In December 2017, M2 achieved Australia's first Uptime Institute Tier IV Constructed Facility Certification for a hyper-scale, greenfield data centre.

Uptime Institute is the IT industry's most trusted and adopted global standard for the proper design, build and operation of data centres – the backbone of the digital economy. For over 20 years, Uptime Institute has been providing customers with the assurance that their digital infrastructure can perform at a level that is consistent with their business needs, across a wide array of operating conditions. Uptime Institute helps organisations optimise critical IT assets while managing costs, resources and efficiency.

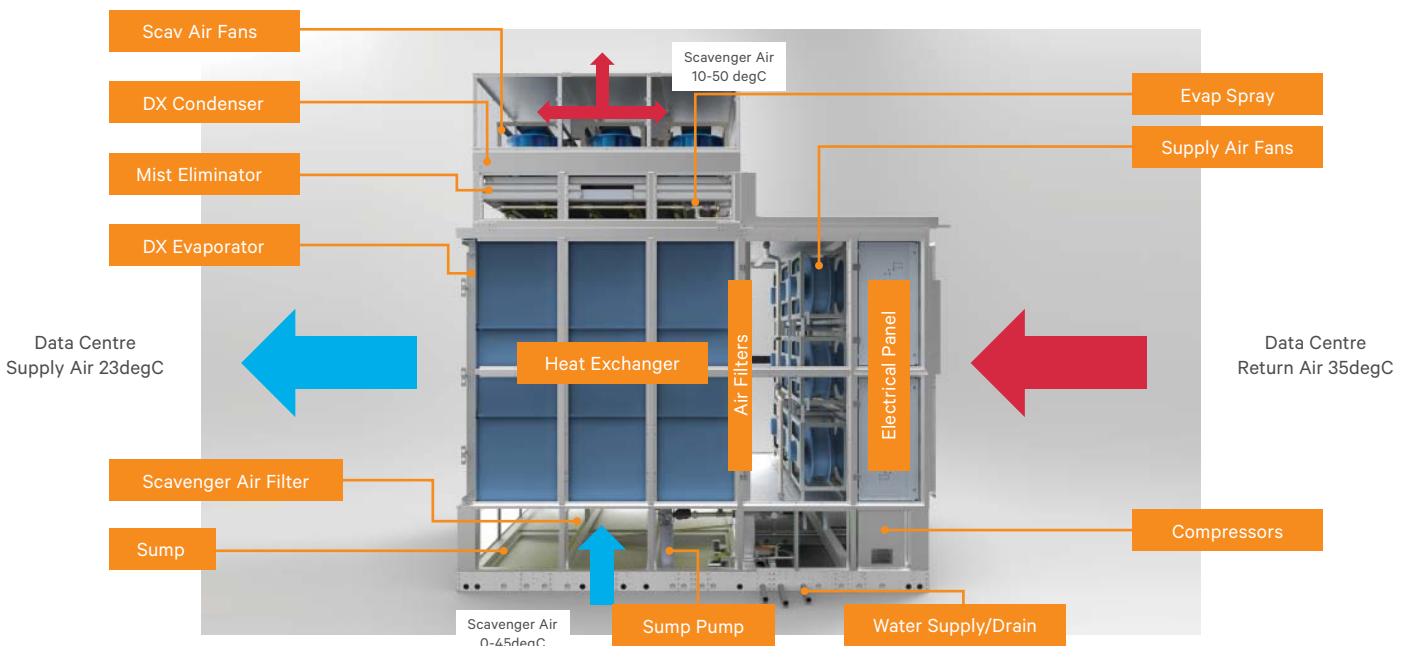
Fault Tolerance is the main feature of Tier IV certification, which also represents the highest level of availability, performance, and resilience that a data centre can achieve to support mission-critical operations. Fault Tolerance means that the failure of an individual piece of equipment or a distribution path will not impact critical IT operations. A Tier IV facility is designed effectively to ensure seamless maintenance, operations, and response to any fault. To achieve a Tier IV rating – the highest available rating the Institute provides – applicants must demonstrate a fault-tolerant and concurrently maintainable system, as well as continuous cooling without fluctuation of more than five degrees to critical IT equipment in any 15-minute period.

“Effective cooling is a vital part of meeting our critical standards,” said Simon Cooper, NEXTDC's Chief Operating Officer. “We embarked on a lengthy and thorough tender process to find the best partner to help us achieve optimal cooling across M2. After extensively reviewing all submissions, we realised Vertiv's team and its Liebert EFC 300 would fit our needs and the partnership was born.”

The industry-leading solution was selected primarily due to its high capacity, low energy consumption and ability to exceed all cooling requirements, but also because of Vertiv's leadership in the thermal space and past success with other colocation providers in meeting similar rigorous standards.

The Liebert EFC 300 uses minimal amount of cooling units to meet the highest levels of cooling, saving on both capital expenditure and maintenance costs. The system includes indirect air-to-air heat exchange and evaporative cooling technology all in one footprint. The Liebert EFC is capable of reducing air temperatures by leveraging the evaporative cooling principle.

“The cooling solution uses iCOM Control to automatically and intelligently cascade units on or off to match capacity to the internal load of the data centre,” said James Miles, colocation, cloud and banking leader, Vertiv ANZ. “This means all assets are constantly monitored to ensure optimum efficiency. This cooling is balanced between water and air cooling to again provide effective cooling with minimal power usage.”



“Our decision to select Vertiv IECs was based on thorough, independent modelling of all cooling options on the market and comparing day one and final capex and total cost of ownership,” said Jeffrey D Van Zetten, NEXTDC’s Head of Engineering and Design. “Efficiency is one of the most vital aspects to not only achieving the optimal solution, but providing best-of-breed colocation services to our customers. Optimised cooling increases efficiency and helps us reduce our carbon footprint and lower costs, which minimises our customers’ energy consumption. We’re targeting an annual average PUE of 1.28 for M2. We achieved a 1.21 PUE during spring time and with tuning we expect PUEs between 1.1 and 1.2. In winter we are targeting spot PUEs of 1.09 or better.”

Vertiv’s engineering and service teams worked alongside NEXTDC and a number of design and construction teams to complete the project. M2 is now able to meet the rigorous standards required by modern IT and welcome the growing number of organisations in Melbourne and surrounding areas looking to invest in colocation and cloud services.

## The Benefits

The M2 data centre’s Uptime Institute Tier IV Certification for Constructed Facility wouldn’t have been possible without the fault tolerance, efficiency, redundancy and capacity of Vertiv’s indirect cooling system, the Liebert EFC 300.

“There are a lot of moving parts involved in the design and construction of any colocation centre, let alone one with the highest standards ever achieved in Australia,” added Van Zetten. “Our goal was to simplify the design to increase reliability and the Vertiv IECs helped minimise the moving parts and interfaces. Key to our decision to select Vertiv is the fact that prefabricated modular construction with units like the Liebert EFC 300 helps minimise site installation time and cost.”

“We would not have met the tough sets of criteria we were up against without Vertiv’s incredibly smart, hard-working service team, which handled extreme pressure and worked with us through unexpected hurdles along the way. The team understood the importance of meeting our strict certification schedules and didn’t rest until the job was done.”

NEXTDC M2 is now the only Australian data centre – not to mention one of a select number in the entire APAC region – to meet both Uptime Institute and IEC standards. This means maximum reliability and energy efficiency and with it cost savings are in place at the centre, and has meant a significant reduction in the data centre’s expected power usage effectiveness (PUE) numbers.

“Enhancing the strategies used in their Tier III data centres, in M2, NEXTDC has achieved Australia’s first Uptime Institute Tier IV Constructed Facility Certification for a hyper-scale, greenfield data centre and globally, the first with a Fault Tolerant N+1 redundant IP-DRUPS electrical system,” said John Duffin, Managing Director, South Asia, Uptime Institute.

“We estimate data centres now account for almost four per cent of power usage in Australia,” said Robert Linsdell, Managing Director, Vertiv ANZ. “Any reductions you can make here mean massive savings in terms of energy efficiency and cost, savings now more important than ever with the recent rise in electricity prices across Australia.”

“We had a very specific goal in mind, and Vertiv got behind that and worked with us to achieve it. We worked tirelessly together and reaching this achievement has given us a unique offering to provide to our customers in Melbourne,” said Cooper.

For more information **visit [www.VertivCo.com](http://www.VertivCo.com)**.



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